comprehensive plan

2016

southburlington

VERMONT

Adopted by the South Burlington City Council February 1, 2016.

Acknowledgements

South Burlington Planning Commission

Jessica Louisos, Chair
Tracey Harrington, Vice-Chair
Bernie Gagnon, Clerk
Art Klugo
Duncan Macdonald
Sophie Quest
Ted Riehle

The City also thanks the work of all of its commissioners over the past five years in developing this plan.

South Burlington City Council
Pat Nowak, Chair
Chris Shaw, Vice-Chair
Helen Riehle, Clerk
Thomas Chittenden
Meaghan Emery

Planning & Zoning Staff
Paul Conner, AICP, Director of Planning & Zoning
Raymond J. Belair, Administrative Officer
Cathyann LaRose, AICP, City Planner

The City also thanks the work of all City volunteers and staff involved in developing this Plan, with special thanks to Madeline Brumberg, GIS Technician.

Executive Summary

Vision

This plan presents a vision of how the City desires to evolve in the coming 20 years. The plan recommends a number of actions and practices that should be undertaken by the City and community to help achieve the goals and objectives therein. This plan and its recommendations are intended to aid the City as it prepares and adopts regulations, prepares capital budgets and annual work programs, and forms citizen committees to study a particular concern.

Considerable effort was dedicated into summarizing the impassioned priorities, plans and aspirations of the community into a simple consolidated vision. The result is strong and can be found in its entirety at the start of the Plan.

Here and into the future, South Burlington is.....

Affordable & Community Strong. Creating a robust sense of place and opportunity for our residents and visitors.

Walkable. Bicycle and pedestrian friendly with safe transportation infrastructure.

Green & Clean. Emphasizing sustainability for long-term viability of a clean and green South Burlington.

Opportunity Oriented. Being a supportive and engaged member of the larger regional and statewide community.

Background & Stakeholder Participation

The 2016 Comprehensive Plan represents the culmination of a multi-year public process of the Planning Commission, and provided an opportunity for the community to revisit the Comprehensive Plan to evaluate key accomplishments as well as areas for improvement. It also provided an opportunity to review current trends and conditions, explore new issues and opportunities, and ensure that recommendations contained in the updated Plan were aligned with the community's vision and goals for the future.

The development of this plan involved extensive participation among the citizens of South Burlington, City officials, regional entities and the business community. It has evolved to its present form based largely on committee work, special studies, policy formulation, discussion and debate.

In addition to citizen participation forums, the Planning Commission has held numerous public meetings to review, discuss and debate the various sections of the plan. The drafting of these sections has involved considerable input by City officials and the School District; various City committees such as the Natural Resources Committee, Energy Committee, Recreation-Leisure Arts Committee, Bike and Pedestrian Committee, Library Board of Trustees; regional entities such as the Chittenden County Regional Planning Commission, Champlain Water District,

Chittenden Solid Waste District, and Chittenden County Transit Authority; and private organizations such as local builders, ad hoc taskforces, the South Burlington Land Trust, and others.

The extensive public input in the plan did not begin or end with the first draft published. Hundreds of stakeholders have contributed throughout the five-year period leading up to its date of publication. Public input has been gathered in all forms, from formal public meetings and hearings before the Planning Commission, to meetings of special project-focused committees, to individual direct and indirect citizen input.

Portions of the plan were refined through the committees formed in 2012 to develop subject-specific reports- Affordable Housing, Open Space, Sustainable Agriculture- as well as the Form Based Code Committee which recommended a series of specific draft amendments to the Land Development Regulations for a newly defined City Center Form Based Codes Overlay District. Each of these committees held several targeted and well attended community meetings and discussion sessions. Stakeholders participated in ice cream socials held in City parks; residents stopped to talk about issues during visits to the community farmer's market. Each ultimately produced a report or draft language which provided direct feedback incorporated into the Plan.

Other reports and studies include: multiple transportation corridor studies and network analyses; extensive outreach and documentation associated with the City's bid for the Georgetown University Energy Prize; a Public Facilities Taskforce led to a recommendation for public buildings, functions, and space within the City Center; an environmental Study provided valuable science-based knowledge of key water and wildlife resources in the Southeast Quadrant; a 2015 Identity study gave insight to valued City features and began a conversation on the strategy desired by the City's residents, business owners, and employees. Specific plans recently completed include management plans for Red Rocks Park and the Wheeler Nature Park, a vision framework for the recently acquired Underwood parcel on Spear Street, a transportation network analysis for the Williston Road / city center area, a Shelburne Road corridor study, and adoption of a Tax Increment Financing District Plan.

The City also participated in and has incorporated various elements of the CCRPC's Regional Plan, and a 2015 study directed by the School Board seeks to plan for the future programming and facility needs of all South Burlington schools..

Electronic methods of outreach have never been more utilized in South Burlington than was in this process. Feedback was solicited and provided via a dedicated website, The Path to Sustainability. A Power of Ten exercise provided a digital conduit for people to share thoughts and ideas about favorite places, problem areas, and other City notes. Recreation and school newsletters shared word of the plan and its components. Front Porch Forum was additionally helpful in reaching thousands of city households.

Organization

This plan is organized into four sections:

- Introduction. This section provides a brief overview of the City, this plan and South Burlington's planning history. It highlights the City's most important goals.
- Community Assessment. This section includes a description of the City's current condition, resources and character, identification of needs and concerns, and analyses of critical issues facing the City, categorized by social, gray, blue, and green infrastructure. Each section also highlights City objectives, and strategies to achieve those objectives.
- Future Land Use. This section includes more geographically specific assessment of the City's districts, with land use objectives and strategies that are unique to certain City districts.
- Attachments. This includes maps, data and additional resources developed as part of the plan update.

Notable Changes

Policy framework refinements to the guiding principles, goals, and policies were made throughout the plan in response to community input and new issues and opportunities that emerged through the process. A simplified structure is now organized around four types of infrastructure and includes a matrix which links goals, objectives and strategies to make sure each work in tandem and keep community decisions accountable to City goals.

Notable changes to the policy framework include:

• Enhanced emphasis on quality of life considerations such as neighborhood livability, community pride and sense of place, parks and recreation, pedestrian and bicycle connectivity, and community resiliency

• Expanded policy linkage to adopted plans

• Expanded discussion of housing affordability and economic policy

• Expanded emphasis on long-term sustainability, including energy efficiency, local agriculture and food security.

Land Area Designations & Future Land Use Map

The plan designates a series of four quadrants and one district that share common geography, land use, and transportation patterns. For each quadrant or district, the Future Land Use chapter provides an overview of existing land use, projected future land use, key planning issues, and transition areas.

The future land use plan is accompanied by a map of the same name. This proposed future land use strives to reflect the overall goals of the City and to balance the various

objectives and strategies of this document, while also providing a more geographically specific assessment of the City's districts, with land use objectives and strategies that are unique to certain areas. The adopted map categorizes land use into several degrees of residential density, commercial, industrial, City Center, and public uses. The map provides for a series of broad categories of planned land intensity. The features on this map are purposefully blended so as not to focus on a specific parcel or delineation between land use features. That level of specificity is left to the Official Zoning Map.

For the purposes of this map and plan, future land use is identified in terms of intensity - a reflection of several variables including types of uses, number of residents, square footage, massing and heights of buildings, clustering and lot coverages, proximity to roadways, type and frequency of roadways - rather than just residential density.

The purpose of the future land use map is not to define residential building density or enumerate the specific figures for other factors of land development intensity, but to provide guidance to the related Land Development Regulations, such that the distribution and relative effect of these developments is in keeping with the City's overall goals.

The Future Land Use Map has been arranged into relative categories:

- Very low intensity, principally open space. These lands emphasize conservation, water quality, and wildlife protection. Land development regulations should provide ease of approval for open spaces, including agricultural land and related uses.
- Lower intensity, principally residential. Fostering a strong sense of neighborhood, these areas are primarily residential in use, with number of units and size of buildings to be among the lowest in the City. More intense commercial or industrial uses should be avoided.
- Medium intensity, residential to mixed use. These areas support an increased diversity of housing options, with increased building density and slightly increased building heights over lower density residential areas.
- Medium to higher intensity, principally non-residential. Intended to foster high quality jobs, these lands provide for medium to large scale industrial, educational, mechanical and office park environments, among other related uses. Their aesthetics should reflect quality design and promote South Burlington as a welcoming place to work and do business.
- Medium to higher intensity, mixed use. These lands are intended to be the most compact and most intensely developed in the City and support employment. Infrastructure is efficient, and transportation is emphasized towards access to transit, pedestrians and cyclists.

This plan represents the heart and vision of South Burlington.

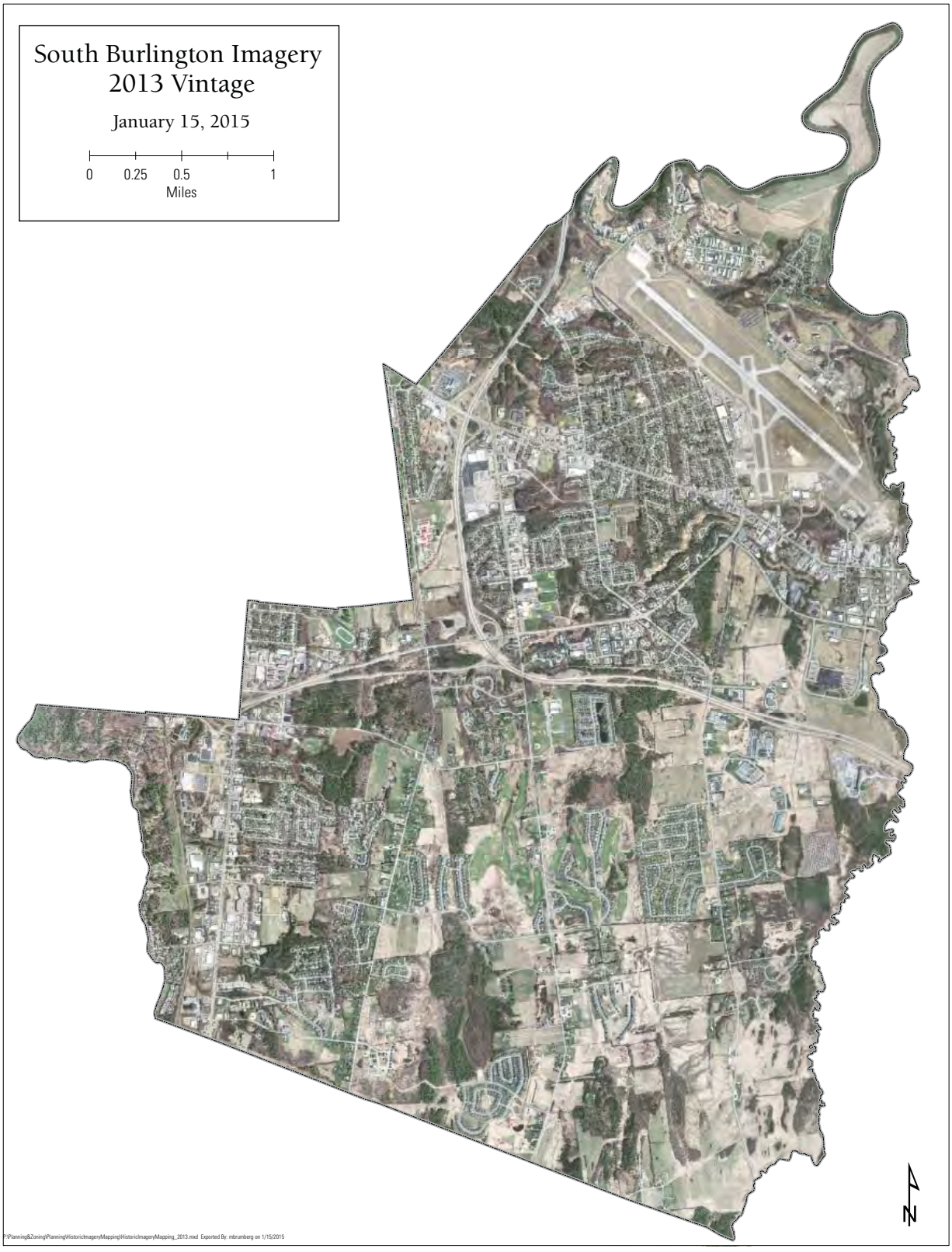
Table of Contents

1: introduction

2: community assessment

each sub-section will contain:

Overview
Inventory
Analysis and Challenges
Future Needs and Trends
Objectives
Strategies


South Burlington Imagery
2013 Vintage
January 15, 2015
0
0.25
0.5
1
Miles
N
P:\Planning&Zoning\Planning\HistoricImageryMapping\HistoricImageryMapping_2013.mxd Exported By: mbrumberg on 1/15/2015

This page has been left blank

1.1. Vision & Goals

Here and into the future, South Burlington is.....

Affordable & Community Strong Creating a robust sense of place and opportunity for our residents and visitors.

- Be affordable, with housing for people of all incomes, lifestyles, and stages of life;
- Keep unique features, and maintain or enhance the quality of life of existing neighborhoods;
- Be a recognized leader in public education offerings and outcomes;
- Provide quality public safety, infrastructure, health, wellness, and recreation services;
- Ensure transparent and accessible government.

Walkable. Bicycle and pedestrian friendly with safe transportation infrastructure.

- Develop a safe and efficient transportation system that supports pedestrian, bicycle, and transit options while accommodating the automobile;
- Establish a city center with pedestrian-oriented design, mixed uses, and public buildings and civic spaces that act as a focal point to the community.

Green & Clean. Emphasizing sustainability for long-term viability of a clean and green South Burlington.

- Promote conservation of identified important natural areas, open spaces, aquatic resources, air quality, arable land and other agricultural resources, historic sites and structures, and recreational assets;
- Reduce energy consumption city-wide and increase renewable energy production where appropriate.

Opportunity Oriented. Being a supportive and engaged member of the larger regional and statewide community.

- Prioritize development that occurs within the community into the higher intensity areas identified within this Plan;
- Support a diverse and vibrant economy built on quality jobs, employment centers and a supportive educational and research system; support markets for local agricultural and food products.

1.2. The City

General Description

The City of South Burlington covers approximately 10,600 acres in the western part of Chittenden County. It is bounded to the northwest by Burlington, the largest city in Vermont. The Winooski River is the northern boundary between South Burlington, Colchester and Essex. To the east, Muddy Brook runs the entire length of South Burlington and separates the city from Williston. Shelburne bounds the city on the south. The southwest section of the city lies on Lake Champlain with 2 1/4 miles of shoreline.

South Burlington is a regional employment, trade, housing, and transportation center. It is also home to substantial natural resources and recreational facilities and programming, a high quality elementary, secondary, and higher education school system, and vibrant neighborhoods. The City is host to many visitors, having the most hotel rooms in the State.

Three major elements contributing to South Burlington's regional and state prominence are its park and trails system, retail and commercial areas and its arterial transportation network. This network includes 27 miles of recreation paths, Vermont's largest airport and direct access to Interstates 89 (I-89) and 189 (I-189). It is traversed by two arterial highways, one railway, and has nearby destination points for large ferry routes.

Energy in South Burlington is provided primarily by imported gasoline, diesel, and heating oil from many independent suppliers, imported natural gas from Vermont Gas Systems, and electricity from Green Mountain Power. Most of the electricity used in South Burlington is generated outside the city, however an increasing number of rooftop and field-deployed solar generation facilities improve the resilience of our energy service system by providing generation capacity that serves the city directly.

A combination of newer and long-established neighborhoods serving a population that is increasingly diverse in its socioeconomic and ethnic composition exist throughout the city and are connected through both roadways and a growing recreational path system.

The city's quality public school system is supplemented by the proximity to the University of Vermont, three private colleges and the Community College of Vermont. A major healthcare institution, the University of Vermont Medical Center, along with a contingent of family doctors and specialists in the area, provide excellent healthcare services.

In addition to these amenities, South Burlington's spectacular scenic and recreational setting adjacent to Burlington's downtown amenities and urban core add to a strong quality of life for South Burlington as well as the entire region.

Before Becoming a City

South Burlington's geographic location, natural resources, and natural features have made it a desirable place for settlement for centuries. South Burlington lies between Lake Champlain, the Winooski River, and the Shelburne Pond watershed. South Burlington's location between these major drainage areas and bodies of water, as well as its natural resources, made the area naturally suited to occupation throughout prehistoric times. There is archaeological evidence that suggests human populations occupied the area as early as 8000 BC.

With the arrival of European settlers at the close of the 18th century, South Burlington was transformed into a farming community. The area is well suited to agriculture due to its gently rolling, fertile soils. Industrial activity also arose around Winooski Falls and the natural lime rock was extracted and refined through kilns. Monkton quartzite was quarried from the eastern edge of the town and utilized in many Burlington foundations. The introduction of the Winooski Turnpike (now Williston Road) and a stagecoach route along what is now Hinesburg Road made South Burlington a central location in the early years of the 19th century. Some taverns and other commercial structures sprang up sporadically along these transportation routes.

Initially development included shared services and utilities with Burlington, which grew to be the financial and service center of the area. In 1865, South Burlington and Burlington became separate communities, with Burlington being the population and business hub and South Burlington being largely agrarian. Farmers brought their goods to Burlington and exchanged them for manufactured goods. The introduction of the railroad along the shores of Lake Champlain brought tourists to the area. Queen City Park became a popular religious summer camp and eventually developed a railroad stop of its own and the Burlington Trolley line was extended to service the area in the closing years of the 19th century.

Growth continued slowly for South Burlington through the first years of the 20th century. With the introduction of the automobile, development shifted to major roads such as Williston Road. In 1919, work was begun on the airport which would become the Burlington International Airport. South Burlington began to become a transportation hub for Chittenden County. With the post-World War II economic expansion, development took off in both the commercial/industrial and residential sectors. Major residential neighborhoods close to the airport, begun prior to World War II, accelerated the pace of construction after the war during the 1940s and 1950s.

The community adopted zoning in 1947 in an effort to provide order to the exploding growth. Between 1940 and 1950, the city's population more than doubled. Pre-war efforts to extend municipal water services from Burlington came to fruition along Williston Road. Between 1950 and 1960, the population doubled again. Many businesses sprang up along Williston Road and Shelburne Road. Diners, motels, restaurants, as well as retail shops and offices began to line these popular strips. Many roadside businesses developed distinctive designs and signs to stand out to the motorist. Farmland was quickly converted to dense development. Conversely, areas

such as Southeast Quadrant and the lakeshore saw little development during this time period.

South Burlington formally was granted city status in 1971. Since that time, as the Social Infrastructure Chapter will illustrate, the population of the city has grown to 17,904 (2010 Census), as has the employment base and amount of conserved natural areas, parkland, recreational paths, and community services available.

In the spring of 2015, South Burlington began the Community Identity Project to better understand how the community, its workers, and neighbors viewed the city. A major goal includes fashioning material that could be used to clearly, succinctly and consistently articulate community identity, pride, strength and direction.

2015 marked the community's 150th anniversary.

The remainder of this plan will address the contemporary opportunities and challenges of balancing continued growth, new development, redevelopment, and changing demographics within the city, with the city's identified goals.

1.3. The Plan

Overview

The Comprehensive Plan is a framework and guide for accomplishing community aspirations and intentions. It states goals and objectives and recommends courses of action for future growth, development, and conservation of land, public facilities and services, and environmental protection. This plan presents a vision of how the city desires to evolve in the coming 20 years. It is based upon inventories, studies, analyses of current and projected trends, and most importantly, the desires of the community. The plan is implemented through various city ordinances and regulations, involvement with state and federal agencies, fiscal practices, and through the actions and lives of city residents and business owners.

This plan recommends a number of actions and practices that should be undertaken by the city and community to help achieve the goals and objectives of the plan. It is important to note that these recommendations are not mandates, but are suggestions to help guide the operations of the city and its citizens. This plan and its recommendations are intended to aid the city as it prepares and adopts regulations, prepares capital budgets and annual work programs, and forms citizen committees to study a particular concern. These recommendations shall be implemented only after considerable thought, discussion and analysis.

Sections. This plan is organized into four sections:

- **Introduction.** This section provides a brief overview of the city, this plan and South Burlington's planning history. It highlights the city's most important goals.
- **Community Assessment.** This section includes a description of the city's current condition, resources and character, identification of needs and concerns, and analyses of critical issues facing the city, categorized by social, gray, blue, and green infrastructure. Each section also highlights city objectives, and strategies to achieve those objectives.
- **Future Land Use.** This section includes a more geographically specific assessment of the city's districts, with land use objectives and strategies that are unique to certain city districts.
- **Attachments.** This includes maps, data and additional resources developed as part of the plan update.

Policy Statements. The Plan includes three levels of policy statements: the Vision & Goals, Objectives, and Strategies.

- **Vision Statement and Goals of the Community.** These are intended to be broad statements of the direction that the City is headed towards. Goals, by definition, are not measurable. These are contained at the very start of the Plan and are intentionally grouped together so that they can be seen and considered as a whole.

- **Objectives.** These are intended to set intentions and, where possible, targets. They are organized by subject area and are contained within each chapter. Objectives strive to follow multiple Goals.
- **Strategies.** These are specific statements of policies and/or types of work to be done to meet the Objectives laid out in the Plan. They do not reach the detailed level of a regulation or a management policy but identify the areas for regulations, policies, and actions to be taken.

Authority and Purpose

The authority to prepare and implement the comprehensive plan is granted to the city through the Vermont Planning and Development Act, Title 24 of the Vermont Statutes Annotated, Chapter 117. It is the purpose of the Act to "... encourage the appropriate development of all lands in this state... in a manner which will promote the public health, safety against fire, floods, explosions and other dangers ... and to provide means and methods for the municipalities and regions of this state to plan for the prevention, minimization and future elimination of such land development problems as may presently exist or which may be foreseen and to implement those plans when and where appropriate."

The Vermont Statutes also specifically detail a series of elements that are required to be included in any local plan, and include a series of statewide planning objectives which local plans are encouraged to be consistent with.

Planning Process

The development of this plan involved extensive participation among the citizens of South Burlington, city officials, regional entities and the business community. It has evolved into its present form based largely on committee work, special studies, policy formulation, discussion and debate conducted over the last 40 years in the development and adoption of previous comprehensive plans.

In addition to citizen participation forums, the Planning Commission has held numerous public meetings to review, discuss and debate the various sections of the plan. The drafting of these sections has involved considerable input by city officials and the School District; various city committees such as the Natural Resources Committee, Energy Committee, Recreation-Leisure Arts Committee, Bike and Pedestrian Committee, Library Board of Trustees; sub-committees; regional entities such as the Chittenden County Regional Planning Commission, Champlain Water District, Chittenden Solid Waste District, and Chittenden County Transit Authority; and private organizations such as local builders, ad hoc taskforces, the South Burlington Land Trust, and others.

The extensive public input that forms the lifeblood of this plan did not begin or end with the first full draft published. The plan is always present, and hundreds of stakeholders have contributed throughout the five-year period leading up to its date of publication.

Public input has been gathered in all forms, from formal public meetings and hearings before the Planning Commission, to meetings of special project-focused committees, to individual direct and indirect citizen input. A substantial portion of this plan was refined through the committees formed in 2012 to develop subject-specific reports: Affordable Housing, Open Space, and Sustainable Agriculture. Each of these committees held several targeted and well-attended community meetings, and discussion sessions. Stakeholders participated in ice cream socials held on site in City parks, and residents stopped to talk about issues during visits to the community farmer's market. Each ultimately produced a report which provided direct feedback to be incorporated into the City's plan. At the same time, the City also appointed the Form Based Code Committee to work through ideas for improvements to the City Center area, with a focus on using form-based coding as a tool to improve design in the District. The Committee ultimately proposed a new City Center Form Based Code Overlay District along with a draft set of recommendations for Planning Commission consideration.

Other reports and studies include: multiple transportation corridor studies and network analyses; extensive outreach and documentation associated with the City's bid for the Georgetown University Energy Prize; a Public Facilities Taskforce led to a recommendation for public buildings, functions, and space within the City Center; an environmental Study provided valuable science-based knowledge of key water and wildlife resources in the Southeast Quadrant; a 2015 Identity study gave insight to valued City features and began a conversation on the strategy desired by the City's residents, business owners, and employees. Specific plans recently completed include management plans for Red Rocks Park and the Wheeler Nature Park, a vision framework for the recently acquired Underwood parcel on Spear Street, a transportation network analysis for the Williston Road / city center area, a Shelburne Road corridor study, and adoption of a Tax Increment Financing District Plan.

The City also participated in and has incorporated various elements of the CCRPC's Regional Plan, and a 2015 study directed by the School Board seeks to plan for the future programming and facility needs of all South Burlington schools.

An ongoing study in the Chamberlin area will provide a unique opportunity to build a plan for the area in greater depth than has been seen in more than 50 years, while simultaneously seeking to build a strong and integral relationship between the neighborhood and the state's largest airport.

Specific plans freshly completed include management plans for Red Rocks Park and the Wheeler Nature Park. The community also provided extensive feedback towards the use of the recently acquired Underwood parcel on Spear Street.

Electronic methods of outreach have never been more utilized in South Burlington as were for this Plan. Feedback was solicited and provided via a dedicated website, The Path to Sustainability. A Power of Ten exercise provided a digital conduit for people to share thoughts and ideas about favorite places, problem areas, and other City notes.

Recreation and school newsletters shared word of the plan and its components. Front Porch Forum has been helpful in reaching thousands of city households.

The input involved in developing the plan will be continued in its implementation. In addition, the Vermont Planning and Development Act requires the comprehensive plan to be updated and readopted every five years. This is important to address change that is so prevalent in our lives. Even before the five-year limit, the city will continue to reevaluate this plan and implementation process in order to best assure a quality living environment and future for the residents and visitors of South Burlington.

Planning History

In the face of urban pressures, changing land uses and expanding needs, South Burlington has attempted to plan and control development and the use of land and water. The first zoning ordinance was adopted in 1947. It zoned the town into residential, business and industrial districts. The Official Municipal Plan adopted in 1953 was the first such plan in the State of Vermont. It delineated new streets with services, schoolhouses, playgrounds and public buildings. The 1947 Zoning Ordinance was amended to implement the plan.

In 1962, a Comprehensive Plan was drawn up which suggested several capital improvement guidelines for development. A new Zoning Ordinance was approved in 1964 based on the 1962 plan. It separated the town into two types of residential districts, two types of business districts, an industrial district and a planned district. The Comprehensive Plan was amended in 1962. That Plan incorporated a Conservation and Recreational Plan - the first in Vermont - that was produced by the Chittenden County Natural Resources Committee. That study is the basis of South Burlington's ongoing efforts to preserve the community's natural environment.

During the 1960s South Burlington was the fastest growing municipality in the State of Vermont and this rapid growth intensified the problem of providing sewage disposal, streets, traffic control, fire and police protection, schools, sanitary landfill and other municipal services. A new Comprehensive Plan in 1974 responded to this rapid growth rate with a growth policy that called for an increase in residential units and in population of two %, or the rate of growth in the county, whichever was greater.

Residential construction, consisting almost entirely of multi-family units, increased rapidly during the late 1970s. Also, commercial activity had been substantial and several major industries (Digital, New England Telephone and Semicon) located in the city.

During the period between the 1981 Comprehensive Plan and the 1985 plan, the plan itself remained essentially the same in an environment of physical, social, and economic change. The 1985 plan reflected a continuing commitment to the basic philosophy and goals of the previous plan. The changes in the 1985 plan were based on more current planning data and the experience gained by the various city boards and commissions in encountering planning issues. The magnitude of the change

during this period within and around South Burlington strongly suggests the need for a continuing comprehensive planning effort. In 1987, this plan was amended to include a discussion on a proposed city center for the Dorset Street area.

The 1991 Comprehensive Plan continued to promote the general philosophy of those goals and recommendations contained in the 1985 plan. However, greater emphasis and fine-tuning was placed on certain important issues facing the community. These included strengthening the city's desire for a City Center, preserving the special character of the Southeast Quadrant, and encouraging the transformation of the city's Williston Road and Shelburne Road corridors into a more attractive, mixed-use, traffic safe environment.

In 1996, the Comprehensive Plan was refined to respond to continuing growth in the city which required renewed planning efforts to maintain the adequacy of municipal services, to direct residential, commercial, and industrial growth to appropriate areas, and to respond to traffic and other problems that have resulted from development patterns of previous years.

The 2001 Comprehensive Plan was formulated to address the continued planning efforts of the city and also to address the new initiatives undertaken. The process of developing this 2001 update to the comprehensive plan began with a citywide planning process involving hundreds of citizens. Studies and planning work completed by the Planning Commission from 2000 through 2006 directly carried out many of these recommendations. An Open Space Strategy was completed in 2002 and was followed by three Southeast Quadrant studies: The Ecological Assessment and Bird Habitat Study (2004), and a new master land use plan for the Southeast Quadrant (SEQ) in 2005.

The 2006 Plan, readopted in 2011, included a revised and expanded chapter on the SEQ, reflecting the results of the studies and input and complementing the zoning regulations amendments passed that same year encouraging preservation of the areas of greatest ecological significance, creating a new village center on Dorset Street around the Chittenden Cider Mill, and making public investments in a series of connected parks and paths woven around new, walkable and connected residential neighborhoods through use of a Transfer of Development Rights (TDR) program; continued implementation is strongly supported by this plan as well.

At the same time, the Chamberlin neighborhood adjacent to the Burlington International Airport has seen some of its housing stock removed by the Airport and in conjunction with the Federal Aviation Administration due to noise impacts from the airport. Establishing a new integrated transition between these two land uses will be a focus during the next several years.

This 2016 Plan seeks to further build upon these core attributes, focusing on strengthening policies in support of the community-wide goals listed on page 1-1 of this plan.

1.4. Implementation

There are many tools and techniques available to the city which can be used to implement the Comprehensive Plan. This section describes the general mechanisms which are in place or could be developed to implement the goals, objectives, and strategies of the city. Other more specific mechanisms for implementation are identified throughout the other sections of this plan. The timing and funding of the following tasks will be determined by the annual work program.

Land Development (Zoning & Subdivision) Regulations

The most commonly used bylaw for controlling development at the local level are zoning and subdivision regulations. Zoning and subdivision regulations control the use of land and structures, and the density, height and bulk of development. 24 VSA Chapter 117 spells out specific requirements and limitations of any municipal land development regulations. The statutes also provide multiple optional tools that communities enact under zoning and subdivision, including:

- Establishment of zoning and overlay districts
- Site plan and conditional use standards
- Performance standards
- Form Based Code inspired standards
- Inclusionary zoning
- Waivers
- Planned unit development
- Transfer of development rights

Many of these tools are presently used with the South Burlington Land Development Regulations, including specific overlay districts dedicated to flood hazard protection, scenic views, interstates, design review, watershed protection, traffic, and airport approaches, and may include additional types in the future in order to implement this Plan.

Official Map

The official map is a local bylaw enabled by State legislation which reserves land for streets, recreation paths, drainage, parks, schools and other public facilities. The city's official map should be completely reviewed and revised where appropriate in the context of this Comprehensive Plan.

Municipal Ordinances

Multiple municipal ordinances are used to implement the Comprehensive Plan. Among those most closely related to land use:

- Sign ordinance
- Ordinance regulating the use of public and private sanitary sewerage
- Peddlers ordinance
- Backyard chicken ordinance
- Control and prevention of fire ordinance
- Public nuisance ordinance
- Tree ordinance
- Impact fee ordinance

Land Acquisition

The acquisition of land will be required in order to implement several goals and recommendations contained in the plan such as the construction of public facilities including parkland, schools, sewer and water facilities, roads and recreation paths. Land may be acquired through fee simple acquisition, conditions of subdivision approval, or donations.

Among the tools implemented by the voters is a $0.01 addition to the annual municipal property tax. The use of those funds is restricted to those provided by the voters, and can currently be used for purchase of lands intended for open space and recreation. More details on this fund can be found in the Community Facilities section of this Plan.

Capital Budget and Program

The city has adopted a capital budget and program in accordance with 24 VSA Section 4426. The capital budget, the principal guide for public spending, describes the capital projects to be undertaken during the coming fiscal year, including the estimated costs and method of financing. The capital program is a ten-year plan describing the capital projects to be undertaken during this timeframe and is updated annually.

Impact Fees

The city has adopted an impact fee program in accordance with 24 VSA Chapter 131. Impact fees are a means by which developments are required to pay for their "fair share" of public capital expenditures needed as a result of their development. Impact fees may be levied for all improvements meeting this criteria, upon adoption by the municipality. At present, impact fees are collected and used for transportation, recreation, fire, and police capital needs.

Tax Increment Financing

The city has designated City Center as a tax increment financing (TIF) district. In TIF Districts, the cost of infrastructure improvements are funded through the tax revenue generated by new development within the district which benefits from

such improvements. It is envisioned that the TIF District will be an important developmental tool in the City Center.

Special Assessment Districts

Special assessment districts are designated areas in which property owners are charged to cover the costs of installing capital improvements from which the property owners will exclusively benefit. Typical improvements funded by special assessment include water and sewer service, stormwater infrastructure, sidewalk construction and street improvements.

Regional, State and Federal Coordination

The city should continue to cooperate with regional, State and Federal entities and agencies as necessary to further the goals and policies of this plan. Regional partners include the Chittenden County Regional Planning Commission, Chittenden Solid Waste District, Champlain Water District, Champlain Housing Trust, Greater Burlington Industrial Corporation, Lake Champlain Chamber of Commerce, and Chittenden County Transporation Authority.

Ongoing Planning and Studies

The City will continue to update the Comprehensive Plan as required by 24 VSA Section 4387. This Plan includes within it recommendation for future action and studies to be undertaken to help implement its overall goals.

2.1. Identity

Through several related but separate studies over the past five years, the City has worked with the community to identify key strengths, concerns, values, and opportunities. A series of workshops and related website helped to put a geographic face on this work, identifying places in the community that residents identified as special. This process engaged residents and business owners in a broader conversation about South Burlington's identity.

In the spring of 2015, South Burlington began the Community Identity Project to better understand how the community, its workers, and neighbors viewed the City. A major goal includes fashioning material that could be used to clearly, succinctly, and consistently articulate community identity, pride, strength and direction. The result of this outreach have influenced this Plan.

Stakeholders had initially identified the need for this for City Center, however, upon bringing in the consultants and seeing what they had created for other communities, it was clear to community attendees at the presentation that this was needed throughout South Burlington.

The consultants put together an online survey which was advertised on Front Porch Forum, via email and also quite extensively in the media. The consultants held several meetings that included community leaders, with high school students, with the hospitality industry and with the community at large. They also traveled around and took pictures of the City. What are people proud of? How is the City perceived now? What about the City should be preserved? What about the City should change?

The meetings and the surveys highlighted some interesting things. Generally in the online survey South Burlingtonians value South Burlington as much as they value Burlington, but they think other people value South Burlington less than they do. The largest group of survey takers felt that the identity of South Burlington is not very distinct from that of the region.

The survey found that people generally love South Burlington, but that the lack of community pride in organizing or attending community based events make it difficult to form strong social ties outside of schools, sometimes even in neighborhoods. There are also many undersung assets, such as the airport, parks, scenic views, a sense of community and businesses and industry. Finally, it was underscored that most outsiders' familiarity with the geography of South Burlington is limited to roads named for other communities – Williston Road and Shelburne Road.

This survey is only one element that has illuminated the perceived identity of the community. The results should be held in context of other past and future forms of

outreach. The discussion of community identity is one that has only recently begun in earnest but has great momentum and is expected to have fruitful results.

The identity of South Burlington lies within the vision, goals, and objectives laid out within this plan. Community interests and priorities are reflected in the plan components with every effort made to showcase the heart and spirit of the City of South Burlington.

2.2. Social Infrastructure

A. Population

Population is a basic index of community growth and population projections are a key element in determining a community's growth-management policies. Schools, roads, police, water and sewer, recreational opportunities, preservation of natural resources, scenic views, congestion, tax rates, and many other determinants of the quality of life are directly affected by changes to a community's population. To properly assess current and future needs and impacts on City services, and other quality of life issues, the characteristics of the community's population should be evaluated.

Overview

Key issues and needs related to the City's population identified in this plan include:

- Increase in the percentage of City residents ranging from 55 to 74 years of age is a signal of future changes in the types of housing, amenities, facilities and services residents will be seeking.

Figure 3-7: Statistical Profile

	South Burlington								County	State
	1940	1950	1960	1970	1980	1990	2000	2010	2010	2010
Population	1,736	3,279	6,903	10,032	10,679	12,809	14,879	17,904	156,545	625,741
Under Age 18				4,136	2,885	2,779	3,415	3,382	31,313	129,233
% of Total Population				*41.2*	*27.0*	*21.7*	*22.8*	*18.9*	*20.0*	*20.7*
Age 65 or Older				428	812	1,336	2,067	2,887	17,685	91,078
% of Total Population				*4.3*	*7.6*	*10.4*	*13.9*	*16.1*	*11.3*	*14.6*
Households			1,790	2,750	3,819	5,178	6,332	7,987	61,827	256,442
Single Person						1,281	1,924	2,648	17,109	72,233
% of All Households						*24.7*	*30.4*	*33.2*	*27.7*	*28.2*
With Children Under Age 18						1,593	1,848	2,018	17,791	72,680
% of All Households						*30.8*	*29.2*	*25.2*	*28.8*	*28.3*
Average Household Size				3.49	2.69	2.42	2.31	2.19	2.37	2.34
Housing Units	525	933	1,273	2,879	3,972	5,437	6,498	8,429	65,722	322,539
Owner Occupied				2,089	2,832	3,709	4,351	5,186	40,310	181,407
% of All Housing Units				*72.6*	*71.3*	*68.2*	*67.0*	*61.5*	*61.3*	*56.2*
Renter Occupied				661	987	1,469	1,981	2,801	21,517	75,035
% of All Housing Units				*23.0*	*24.8*	*27.0*	*30.5*	*33.2*	*32.7*	*23.3*
Detached Units						2,891	3,379	3,747	36,894	229,116
% of All Housing Units						*53.2*	*52.0*	*47.7*	*58.0*	*72.9*
Attached Units						2,396	3,114	4,113	26,686	85,053
% of All Housing Units						*44.1*	*47.9*	*52.3*	*42.0*	*27.1*

Source: US Census

- Continuation of the decline in average household size and increases in the number of single-person households will keep demand for housing units growing at a rate faster than overall population growth.
- Anticipated levelling off of the City's total population by 2025, alongside continued new housing demand, will place a greater burden per resident on municipal services.
- Declining rates and absolute numbers of children will result in decreased local school enrollment.
- Overall population changes - increases in single- and two-person households, increased population aged 65+, and increased diversity in ethnicity and background - will warrant continued assessment of the type and method of delivery of City services.
- As people continue to move into the City, ongoing efforts will be needed to welcome and connect new residents with their community - both at the neighborhood and city level.
- Residential development needs to be monitored on an ongoing basis and measures taken as necessary to maintain a balanced, multi-generational population as measured over any 10-year period.

Inventory

Population Change. South Burlington's population began to grow rapidly in the 1940s with the development of post-war residential suburbs. The rate of growth remained very high throughout the 1950s and 1960s, when the City added more than 3,000 residents each decade. Except for the period during the 1970s, the City has experienced a rate of growth greater than both Chittenden County and Vermont over the past 50 years. This higher rate of growth can most likely be attributed to a combination of the following factors: the City's location in the most populous county in the State, its abundance of open, developable land, and a high quality of life. The average annual growth rate from 2000 to 2010, based on data from the US Census Bureau was 1.9 %. The official population count as of 2010 was 17,904, up from 14,879 in 2000. In 2014, the City and School District commissioned a population forecast for the upcoming decade, through 2015. The forecast, developed by McKibbin Demographics based on rigorous data modelling and conservative

	South Burlington							County	State
	1940s	1950s	1960s	1970s	1980s	1990s	2000s	2000s	2000s
Population Growth	1,543	3,624	3,129	647	2,130	2,070	3,025	9,974	16,914
Percent Growth	*88.9*	*110.5*	*45.3*	*6.4*	*19.9*	*16.2*	*20.3*	*6.8*	*2.8*
Average Annual Growth Rate	*6.6*	*7.7*	*3.8*	*0.6*	*1.8*	*1.5*	*1.9*	*0.7*	*0.3*
Household Growth			960	1,069	1,359	1,154	1,655	5,375	15,788
Percent Growth			*53.6*	*38.9*	*35.6*	*22.3*	*26.1*	*9.5*	*6.6*
Average Annual Growth Rate			*4.4*	*3.3*	*3.1*	*2.0*	*2.3*	*0.9*	*0.6*
Housing Unit Growth	408	340	1,606	1,093	1,465	1,061	1,931	6,858	28,157
Percent Growth	*77.7*	*36.4*	*126.2*	*38.0*	*36.9*	*19.5*	*29.7*	*11.7*	*9.6*
Average Annual Growth Rate	*5.9*	*3.2*	*8.5*	*3.3*	*3.2*	*1.8*	*2.6*	*1.1*	*0.9*

Source: US Census

	South Burlington																									County	State
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2014
Population																											
Population Estimate *(in thousands)*	12.8	13	13.2	13.5	13.6	14	14.2	14.3	14.5	14.7	14.9	15.3	15.8	16.3	16.5	17	17.1	17.4	17.6	17.6	17.9	18					
Births	126	150	139	177	168	160	143	165	144	155	173	146	180	174	198	196	169	174	166	158	205	172					
Birth Rate	9.8	11.5	10.5	13.1	12.2	11.4	10	11.5	9.9	10.5	11.6	9.5	11.4	10.7	12	11.5	9.9	10	9.4	9.0	11.4	9.5					
Deaths	65	68	81	80	83	96	104	93	104	105	111	98	106	144	134	129	148	130	155	133	139	131					
Housing																											
Units Permitted *(Census / City)*	31	55	64	131	57	127	65	26	140	216	214	260	296	132	335	47	165	98	91	99	91	148	92	105	121		
Single-Family Units	17	40	39	41	39	30	26	21	60	67	214	145	88	132	72	47	69	63	46	35	25	16	43	29	30		
Multi-Family Units	14	15	25	90	18	97	39	5	80	149	0	115	208	0	263	0	96	35	45	64	66	132	49	76	91		
Median Sale Price *(in thousand $)*	103	107	106	113	119	112	113	117	116	123	145	155	163	180	201	195	235	235	240	230	240	246	250	259	237		
Adjusted to 2014$ (in thousand $)	187	186	179	185	190	174	171	173	168	175	199	207	214	232	252	237	276	269	264	254	261	259	258	263	237		
Number of Sales	282	257	220	274	360	280	283	259	352	472	551	567	470	552	553	635	436	442	356	290	319	282	299	380	396		
Economy																											
Establishments	737	831	867	910	913	932	939	938	939	939	970	980	989	1,032	1,043	1,053	1,062	1,086	1,110	1,107	1,086	1,091	1,093	1,116	1,116		
% of Establishments in County	15.4	16.9	17.2	17.7	17.7	17.8	17.5	17.2	17.2	17.1	17.2	17.3	17.7	18.3	18.4	18.4	18.5	18.5	18.5	18.6	18.4	18.3	17.9	17.9	17.6		
Employees *(in thousands)*	13.5	13.1	13.3	13.9	14.5	15.2	15.9	15.9	16.3	16.8	17.5	17.7	16.9	17.1	17.7	17.9	17.8	17.8	18.4	18.1	18.1	18.0	18.1	18.2	18.5		
% of Employees in County	17.5	17.4	17.4	17.8	18.1	18.4	18.7	18.5	18.4	18.4	18.3	18.4	18	18.3	18.6	18.8	18.7	18.7	19.4	19.6	19.4	18.8	18.4	18.3	18.6		
Average Wage *(in thousand $)*	20.2	20.9	22.2	22.7	22.3	23.5	25.1	26.6	28.6	29.9	32.2	32.5	33.3	34.3	35.6	36.6	39.8	39.1	40.6	40.9	42.4	43.7	45.1	46.1	47.4	49.6	43.0
Adjusted to 2014$ *(in thousand $)*	36.6	36.3	37.5	37.2	35.6	36.5	37.9	39.2	41.5	42.5	44.3	43.4	43.8	44.1	44.6	44.4	46.7	44.6	44.6	45.1	46.0	43.7	46.5	46.8	47.7	49.5	43.0
Gross Sales Tax (in million $)											1,054	1,062	1,075	1,111	1,336	1,341	1,352	1,540	1,702	1,518	1,821	1,964	1,877	1,899	1,984	9,174	36,814
Adjusted to 2014$ (in million $)											*1,449*	*1,420*	*1,415*	*1,429*	*1,674*	*1,626*	*1,588*	*1,758*	*1,872*	*1,675*	*1,977*	*2,067*	*1,935*	*1,930*	*1,984*	*9,174*	*36,814*
Retail Sales Tax *(in million $)*											255	288	275	279	297	317	323	318	344	303	314	325	323	323	332	1,592	5,568
Adjusted to 2014$ (in million $)											*351*	*385*	*362*	*359*	*372*	*384*	*379*	*363*	*378*	*334*	*341*	*342*	*333*	*328*	*332*	*1,592*	*5,568*
Use Sales Tax *(in million $)*											16	27	23	17	23	26	17	21	22	17	16	21	21	29	30	92	333
Adjusted to 2014$ (in million $)											*22*	*36*	*30*	*22*	*29*	*32*	*20*	*24*	*24*	*19*	*17*	*22*	*22*	*30*	*30*	*92*	*333*

assumptions, anticipates that the City's overall population will continue to increase modestly through 2020 and then level off by 2025 at approximately 18,310 residents.

Natural Increase. Natural increase, the number of births minus the number of deaths, is one component of population change. While there is considerable fluctuation in the City's annual amount of natural increase, a gradual downward trend has been evident since the early 1990s. The 2014 Population Forecast anticipates a gradually widening gap of deaths above births, from -70 in 2015 to -220 by 2025. This is due to a combination of factors, including a decrease in the population of women of child-bearing age, together with an increase in the proportion of the population that is elderly.

Migration. Net migration (people moving in minus those moving out) is the second major element driving population change. Over the past 50 years, more of the City's population growth has been due to net migration than to natural increase. The 2014 Population Forecast anticipates a continued, though slightly declining net in-migration into the community. The Forecast includes in its assumptions, notably, that there will not be an unexpected regional employer loss in the area. The City and region have fostered a diversity of businesses over the past half-century to help guard against such situations.

Age Distribution. Over the past 50 years, the age profile of the City's population has shifted considerably. The percentage of the population composed of children under age 18 has declined, while the population segment made up of residents age 65 or older has grown. The US Census Bureau reported that the median age of City residents in 2010 was 40.6. In 2010, 18.9 % of residents were under age 18, and 16.1 % were age 65 or older. Those percentages are forecasted to be declining, and increasing, respectively, in the coming years, with the median age expected to reach over 44 by 2025.

Household Size. Household size has been declining across the country for many decades. The City's average household has declined from around 3.5 people in 1970 to 2.19 people in 2010. This has led the number of households to grow at a faster rate than the population.

Household Composition. The characteristics of the City's households have also changed markedly in recent decades. Single people currently make up one-third of the City's households, while another quarter are married couples without children living at home. Only one-quarter of households include children under age 18. Evidence from the past decade suggests that the percentage of single-person households in the City is relatively stable. Because of the presence of UVM, this segment of the population includes young adults in addition to elders.

Population Diversity. The Census Bureau estimates that 11% of the City's population was foreign-born in the years 2009-2013, and 13% spoke a language other than English at home. Of these, approximately one-third, or roughly 700 residents, report speaking English less than "very well." In terms of race, 90% of the City's population reported as White in 2010. The next largest population segment was Asian, at 5.4%.

Household Income. In 2013, the median family and household incomes in the Burlington-South Burlington Metropolitan Statistical Area were $81,871 and $62,022, respectively, according to the US Census Bureau's American Community Survey (ACS) 1-year estimates. The mean incomes were $101,757 and $81,011 respectively.

Not surprisingly, housing costs for households with lower incomes are typically higher as a percentage of income. The majority of households in each income bracket up to $50,000 annually paid more than 30% of their incomes towards housing costs.

Approximately 5.1% of the City's population was below the poverty level in 2013, according to the ACS's 2013 5-year estimates. This was spread relatively evenly among age groups except for the population 65 years of age and over, which was at just 3.6%.

Analysis and Challenges

Aging Population. The aging population trend is visible throughout Vermont and many places around the country as each generation born after the baby boomers has been smaller in numbers. South Burlington and Chittenden County have generally had a younger population than the state as a whole, but that gap has been narrowing in recent years. Anecdotal evidence suggests that some housing built in recent years has been attracting retired couples. The 2015 Population Forecast noted that there will be a increase in the number and proportion of persons aged 55 to 74 years. These changes in the demographics will likely affect the regional economy, as well as local demand for housing, education, health care, and other services.

Smaller Households. The average household size is anticipated to continue to decline in the near term, thus ensuring that the rate of household formation will remain high in the City even if population growth slows. It is the number of households, as opposed to residents, that primarily drive demand for housing and many City services. The amount of decline will be linked to the age distribution and socioeconomic characteristics of the City's future residents. Over the next several decades, it is likely that household size will stabilize to a level between 2.0 to 2.5 people, although changes in the regional economy could cause unexpected shifts in either direction. The uncertainty around average household size is a challenge to estimating housing needs based on population projections. Any decrease in household size will continue to place pressure on City and school services such as emergency response, infrastructure maintenance, permitting, land records, and more as the numbers of homes and amount of infrastructure increases at a greater rate than the population of taxpayers..

Migration. The role of migration in South Burlington's growth rate also makes it more difficult to project population change. Birth rates are linked to the demographic profile of current residents, but the economic factors that drive people to move into or out of an area are less predictable. Further, rapid turnover in the City's population poses a challenge for efforts to engage residents in the community and neighborhood-level planning.

Loss of Young Families. Research initiated by the South Burlington School District examining early childhood education has indicated a consistent trend of young families moving out of South Burlington in the years following the birth of their children. An analysis of birth rates and subsequent school enrollment five years later has shown a drop in several successive years.

Future Trends and Needs

Population Forecast and Planning. The City and School District in 2014 engaged McKibbin Demographic Research to undertake a 10-year Population and Enrollment Forecast for the community. It anticipates modest increases in population through 2020 and a levelling off by 2025. This differs from the last projections completed by the City in 2006, which had anticipated continued growth. This projection suggested that by 2015, the City's population could exceed 21,000. Census data, combined with the economic downturn that began in 2008, indicate that this estimate was substantially high.

It is the City's responsibility to provide opportunities for a fair and reasonable amount of new population and housing units to help meet regional demands. While both "excessive growth" and "stagnation" have their disadvantages, most City residents accept a moderate rate of growth as normal and healthy for the community. The City, therefore, sees no compelling advantage to becoming a "magnet" for a large proportion of the county's population growth, nor to adopting a "no growth" policy.

Monitoring and anticipating future changes in population and demographics are critical to future planning for City services, in terms of capital needs, facility planning, staffing needs, recreation and open space planning, and transportation needs.

It is recommended that trends in absolute population be monitored closely, and also be monitored together with equally important trends in housing construction, commercial development, and employment. Separately and together, these four subject areas have a significant impact on municipal and school services, financing, and needs.

With the anticipated development of City Center, the City will plan to continue its historic housing growth rate of 1.5-2%, and a population growth rate of 1-1.5%. This long-term growth rate represents a conservative approach to planning for future needs.

Should the community experience prolonged periods of population change that varies dramatically from this estimate, the City will need to either reevaluate its planning assumptions and adjust accordingly, or consider the implementation of growth management techniques to either foster or suppress growth as needed. Techniques could include development phasing, sewer allocations, impact fees, or zoning amendments.

Population Objectives

Objective 1. Anticipate and prepare for an average annual population growth rate of approximately 1-1.5 %, and a housing growth rate of 1.5-2 %.

Population Strategies

Strategy 1. Monitor the rate of population growth and land use development on an annual basis, as measured over 10-year averages.

Strategy 2. Use growth management techniques, such as development phasing and sewer allocations, to ensure that the rate of development does not outstrip the City's ability to provide services in a cost-effective manner.

Strategy 3. Regularly evaluate the impacts of changes in population and housing growth rates for their financial and programmatic impacts on City services.

B. Housing

Shelter is a basic need and providing for housing is a fundamental element of this plan. Provision of safe and affordable housing that is well-matched to residents' circumstances is an essential requirement for the City to maintain its quality of life, retain existing businesses and support further economic development, and attract future residents. A diversity of housing options at a range of price points is a necessary component of any plan to maintain or grow the local economy.

The need for an increased supply of housing affordable to middle and lower income households is recognized in this plan and has been recognized in several previous plans. In recognition of this need, the City adopted Land Development Regulations providing bonuses and incentives for the development of affordable housing in 2003. These regulations played a role in the development of the City's 605 affordable housing units.

In 2012 the City Council established an ad hoc Affordable Housing Committee to research and make recommendations regarding what the City might do to address the growing gap between the need for and supply of affordable housing in the City. In addition, in November 2014, the City Council unanimously adopted a resolution establishing a South Burlington Housing Trust Fund and creating a standing Affordable Housing Committee; in January 2015, the City Council voted to include $50,000 for this Trust Fund in the fiscal year 2016 budget, which the City's voters approved in March 2015.

The ad hoc Affordable Housing Committee's 2013 report states:

"There is a critical need for more housing in South Burlington that local residents can afford – including young adults just starting out, young families looking for a first home, employees of local businesses, and a growing number of seniors on fixed incomes."

Several of the objectives, techniques, and strategies included in this chapter are based on the Affordable Housing Committee's work and recommendations.

Overview

Key issues and needs related to the City's housing stock and residential development trends identified in this plan include:

- Preserving and promoting the development of additional housing that is affordable to households of all income levels throughout the City.
- Meeting the housing needs of increasing numbers of single-person households and seniors.

- Supporting the quality of life of the City's residential neighborhoods.
- Complementing new development areas with redevelopment of low-density, single-use commercial areas to higher-density mixed-use areas and appropriate infill within existing neighborhoods.

Inventory

Existing Housing Stock. The analysis prepared for the Affordable Housing Committee found a total of 7,940 dwelling units in South Burlington as of 2010. The City's housing stock includes 1,348 (17%) apartments in multi-unit buildings; 2,873 (36%) condominium units; and 3,719 (47%) residences with land. The number of accessory dwelling units is not known. Approximately 65% of the housing stock is owner-occupied while 35 % comprises rental units.

Residential Construction. The number of housing units in South Burlington has grown steadily each decade since the first Census housing count in 1940. Between 1940 and 2010, nearly 8,750 dwellings were constructed in the City. The City experienced rapid housing growth during the period from the late-1970s through the mid-1980s, largely due to multi-family development, which includes both rental housing and condominium style ownership. During the late-1980s and early-1990s, the rate of housing growth slowed and new construction shifted to predominantly single-family detached dwellings. For a period of time in the late 1990s and early 2000s, the rate of housing construction in the City averaged around 200 units per year and South Burlington again experienced increased development of multi-unit structures. The late 2000's and early 2010's saw a decrease in the amount of residential dwelling units built. Indications of the last few years are that the number of housing units constructed annually has increased slightly. Over the last 35 years, the City has averaged approximately 140 units per year with cyclical fluctuations.

The type of housing units being built in the City over the past 25 years has been weighted toward multi-family structures, including both apartment rental and condominium ownership. According to the Census Bureau, the City added 835 owner-occupied and 820 rental units during the 2000s. This represented a 20% increase in owner-occupied housing and a 40% increase in rental housing. During the past decade, 70% of the new homes on their own lot built in the City were valued at more than $400,000 and another 24% were valued between $350,000 and $400,000. Meanwhile, over 100 of the City's stock of entry-level homes have been lost to demolition near the airport; elsewhere, conversion to other uses, for example, rentals to unrelated individuals, has resulted in additional losses of entry-level homes available for owner-occupancy.

Age and Condition. The quality of building workmanship, design, and materials used in the City's existing housing stock appears to not pose a threat to the health and safety of residents. Only seven percent of the City's housing stock dates from before World War II, with more than half having been constructed since 1980.

Owner-Occupied Homes. The cost of owner-occupied housing in South Burlington has risen sharply in recent years in response to the tight housing market in northwestern Vermont and due to the addition of new higher-priced units. The 2011

median sale price of a single-family home in South Burlington was $310,000 and of a condominium was $186,000.

Rental Market. In 2010, median rent for a South Burlington apartment was just over $1,000 a month. Over the past 10 years, monthly rents have increased approximately $200. As of 2011, South Burlington's rental housing stock included 605 affordable units, about 60% of which house elderly or disabled residents. Most of these affordable rental units were constructed between 1995 and 2003. Since then only 91 affordable rental units, all for seniors, have been built.

Affordability. Affordable housing helps to retain and attract a qualified work force and provides an opportunity for first-time home buyers and older residents to remain in the City. Recent Census Bureau estimates indicate that nearly one-third of SB homeowners (1,600 households) and one-half of renters (1,350 households) spend more than 30 % of their income on housing. About 1,000 of these households—nearly 600 renters and 400 owner households—are severely cost burdened, spending more than 50% of their household income on housing.

	RENTAL UNITS	OWNERSHIP CONDOS	OWNERSHIP ON OWN LOT	ALL HOUSING
% of all housing by type that was affordable in 2010 to households earning:				
Up to 50% AMI	23%	3%	0%	7%
>50% to 80% AMI	49%	45%	5%	30%
>80% to 120% AMI	17%	36%	47%	36%
TOTAL	89%	85%	53%	73%

About 28% of the City's existing owner-occupied housing stock is affordable. A median income South Burlington household ($61,000 per year) can afford a home priced at no more than $205,000. Approximately 2,000 City households have annual incomes of less than $40,000. A three-person household earning up to 50% of area median income (AMI) would have an annual income of no more than $33,000 and could afford to spend $800 per month on housing. At 80% of AMI, a three-person household would be earning $53,000 per year and could afford to spend $1,300 per month on housing. A three-person household earning 120% of AMI would have an annual income of $80,000 and could afford to spend up to $2,000 per month on housing. These HUD-established incomes limits are for a three-person household in the Burlington–South Burlington MSA.

Housing Targets. The 2013 ECOS Plan (Chittenden County's Regional Plan) calls for the need for additional housing throughout the county.

To meet the City's goals for diversity and affordability, a wider spectrum of housing will have to be built in South Burlington. How much affordable and moderate-income housing should be built in South Burlington? This Plan includes affordable housing

targets that seek to maintain a housing profile that is fairly similar to what presently exists in the City with a diversity of housing types across the price range. The figure included herein depicts the current South Burlington housing profile vis-à-vis housing type and affordability.

By adopting housing targets based on affordability for low- and moderate-income households, South Burlington will be able to monitor and assess the effectiveness of City regulations, incentives and/or programs designed to foster housing production in support of its vision and goals. The targets should be regularly reviewed and the underlying assumptions re-evaluated to ensure they reflect current needs, conditions, and policies in the City.

Ten-Year Affordable Housing Targets. Based on the Affordable Housing Committee report's recommendation, this plan includes targets of construction, by 2025, of 1,080 new affordable housing units - 840 housing units affordable to households earning up to 80% of the AMI and 240 housing units affordable to households earning between 80% and 120% of the AMI.

Analysis and Challenges

Affordability. Maintaining the City's current housing profile, based on housing type and price range, represents a major challenge for South Burlington. The City has experienced a steady increase in the number of housing units and its housing growth rate has slightly outpaced that of the county. Meanwhile, regional demand for additional housing units has been high and vacancy rates low over the past decade as the household growth rate slightly outstripped housing construction. These factors are major contributors to the City's and region's very tight housing market. With more than one in three households spending more than 30% of their income on housing, the need for more affordable housing is critical. In addition, the City strives to be a place in which its workforce can afford to live. South Burlington is a regional job center, with nearly 1,100 employers and 18,000 jobs as reported by the Vermont Department of Labor. However, only 13% of those working in South Burlington also live in the City (U.S. Census/ LEHD). This raises the question of whether local wage earners earn enough to afford local housing.

Employment data highlights the need for more affordable workforce housing, close to employment, in the City as well as in neighboring communities. The majority of City jobs (82%) are in the service sector, paying an average wage in 2011 of $41,500, enough to afford a home priced at $152,000. Many of the most common jobs in this sector, including typically part-time retail employment, pay even less. City government jobs pay an average wage of $46,000, enough to afford a home that costs no more $168,500, assuming one wage earner and no other sources of income. This is important to monitor for employees' ease of travel to work for either emergency response or community engagement.

Changing Demographics. Much of South Burlington's housing has been constructed to meet the needs of families with children. Future housing development needs to take

into account the City's changing population. As a result of recent trends, around 70% of the City's households consist of one or two people; only 25% of the City's households are families with children under age 18; and around 40% of the City's households are headed by someone age 55 or older. The number of older households is expected to increase over the next decade. Around 44% of the City's population is between age 20 and 35 – including those who are entering the housing market, or looking to buy their first home.

Community input suggests that many of these households are seeking housing that is smaller than that developed in the past and/or housing with limited maintenance requirements. Furthermore, the trend for both younger and older, smaller households often is to rent rather than own their own home.

Smart Growth. After close to seven decades of continued residential construction, a relatively small amount of undeveloped land remains available in the City. South Burlington will need to look increasingly to opportunities for higher-density, mixed-use development in targeted growth areas like City Center and other infrastructure-served portions of the community, as well as increased density and infill development within existing neighborhoods in order to meet demand for additional housing units. In addition, the City should strive to attain the Chittenden County Regional Planning Commission's ECOS Plan goal of having 80% of new development take place in areas planned for growth, which amounts to 15% of the (Chittenden County's) Land area. This Plan is consistent with the Regional Plan's growth areas.

Building Codes. A central element in any housing policy is the assurance of good quality in both existing units and new construction. Due to the number of attached residential units, the high density of development in many parts of the City, and the aging or subdivision of dwellings, the need for building, plumbing, and electrical codes is increasing. The existence of such codes can decrease insurance premiums, as well as stabilize the future requirements for firefighters and equipment in maintaining the same degree of fire protection. Currently, the City does not have municipal building codes. The construction of rental and multi-unit housing in the City is regulated by State of Vermont Fire Codes through the South Burlington Fire Marshall's Office.

Future Needs and Trends

Affordability. The proportion of new affordable residential units, both rental and owner-occupied, built in South Burlington in the coming decade must increase substantially in order to support its economic vitality and maintain its current housing profile. It is clear that the market alone will not produce that supply. The City has no direct control over such cost factors as increases in labor, materials, down payments, or mortgage rates and availability of credit. However, the City can influence housing cost factors in other areas such as amount and density of land zoned for different types of residential uses including positively promoting mixed-use development, length and consistency of governmental reviews, extent of "front end" subdivision improvements and other expenses, and participation in State initiatives such as Neighborhood Development Areas.

Techniques that can be used to encourage and, in some circumstances, require the development and preservation of affordable housing,include the following:

- Reexamination of the definition of "density" to consider building and unit size as well as units/acre.
- Creative site development, such as clustering, to reduce lot size and site development costs.
- Density bonuses or incentives to encourage the development of affordable housing.
- Financial and advocacy support for South Burlington's Housing Trust Fund.
- Higher densities and smaller lot sizes.
- Involvement of housing organizations such as the Champlain Housing Trust and Cathedral Square to construct or rehabilitate affordable housing in the City.
- Promotion of mixed-use developments that create a variety of housing opportunities within commercial areas located centrally to public transportation and other services.
- Location of affordable, elderly, and/or higher-density housing near schools, parks, shopping centers, employment centers, daycare facilities, transportation corridors, emergency services, and public transportation.

Affordable Housing Trust Fund. The South Burlington Housing Trust Fund was established by the City Council on November 17, 2014. Its purpose is to provide an ongoing stream of funds to support strategic participation in development that will increase the City's stock of housing that is affordable to households with income below 80 % of median. Among the potential strategies to accomplish this objective, the Trust Fund may (1) participate in new housing development by providing needed funds to support the financing of a project undertaken by a non-profit or for profit developer that meets the City's affordability standards, (2) participate financially in projects that preserve existing affordable housing stock in the City, (3) provide pre-development funding under strict guidelines to housing agencies or developers to assess the feasibility of a planned affordable housing project in the City and (4) support or participate in the purchase of land intended for affordable housing development.

Additional Resources

- **The Path to Affordability: South Burlington 2013 Affordable Housing Report**

Housing Objectives

Objective 2. Offer a full spectrum of housing choices that includes options affordable to households of varying income levels and sizes by striving to meet the housing targets set forth in this Plan.

Objective 3. Foster the creation and retention of a housing stock that is balanced in size and target income level, is representative of the needs of households of central Chittenden County, and maintains an efficient use of land for use by future generations.

Objective 4. Support the retention of existing and construction of new affordable and moderate-income housing, emphasizing both smaller single family homes and apartments, to meet demand within the regional housing market.

Objective 5. Build and reinforce diverse, walkable neighborhoods that offer a good quality of life by designing and locating new and renovated housing in a context-sensitive manner that will facilitate development of a high-density, City Center, mixed-used transit corridors, and compact residential neighborhoods.

Housing Strategies

Strategy 4. Implement a variety of tools and programs to foster innovative approaches to preserving and increasing the City's supply of affordable and moderate income housing. Potential tools should be explored and could include form-based codes that would allow a variety of residential and mixed use building types, transferable development rights, neighborhood preservation overlay districts, household definition regulations, inclusionary zoning, bonuses and incentives, waivers and expedited review processes, and/or a housing retention ordinance.

Strategy 5. Increase the supply of safe and affordable rental housing by allowing higher-density, mixed-use and mixed-income development within City Center and transit corridors, allowing multi-unit housing within transitional zones between residential neighborhoods and commercial/industrial land uses.

Strategy 6. Promote the preservation of existing housing stock in residential neighborhoods, particularly the supply of affordable and moderately-priced homes.

Strategy 7. Accommodate compatible infill and additions to homes in existing neighborhoods.

Strategy 8. Explore innovative land development regulations that allow for a range of residential building and neighborhood types, including but not limited to cottage housing, clustered housing and infill residential development.

Strategy 9. Streamline administrative policies for affordable housing and consider reducing or eliminating permit and impact fees for affordable housing.

Strategy 10. Develop strategies that can lead to the availability or development of more housing that is affordable to middle income, working residents and families in the City. Work through the CCRPC with surrounding communities to increase the inventory of housing that is more affordable to families. Consider development of a program that enables "empty nesters" occupying "family" sized housing to comfortably downsize into a multi-family unit that may be available nearby keeping them in their neighborhood but freeing the former home up for new generations of young families.

Strategy 11. Study the need for the City to adopt and enforce local building, plumbing, electrical, fire, and energy codes; study the need for a rental registry program, and strengthen the enforcement of the City's land development regulations and state's rental housing code to protect residents' health and safety and preserve the quality of life in and character of the City's residential neighborhoods.

Strategy 12. Promote the construction of new homes - particularly affordable and moderate-income units - that are highly energy-efficient, and upgrades to existing homes to make them more energy-efficient, which will reduce residents' overall cost of living and contribute to housing affordability.

Strategy 13. Target for construction, by 2025, of 1,080 new affordable housing units - 840 housing units affordable to households earning up to 80% of the AMI and 240 housing units affordable to households earning between 80% and 120% of the AMI.

C. Economy

The continued vitality of the City and quality of life for our residents depends heavily on the continued prosperity of its businesses and industries. The local economy is the engine that drives people to move in or out of the community. Demand for housing, transportation and infrastructure are linked to the local economy. A healthy economy supports municipal services and the education system. Maintaining a balance of employment and residential opportunities preserves the City's sense of community and quality of life.

Overview

Key issues and needs related to the economic development trends identified in this plan include:

- Convenient access to employment either within the City or within a short commute to neighboring employment centers in Chittenden County is a key component of the City's quality of life. South Burlington boasts one of the shortest average commutes in the nation at around 15 minutes. This results in residents having more time available for their families, recreational activities, volunteering, etc., having to spend less of their income on fuel and vehicle expenses, and having a smaller carbon footprint.
- South Burlington's economy is characterized by a diverse mix of businesses, including several large companies and many small- to medium-size firms, and the City has been considered a good location to start a business for decades. As land becomes an increasingly scarce resource in the City, the cost of locating a new business in South Burlington may increase and could cause the City to become cost-prohibitive for start-up companies and small, local enterprises. This challenge may be addressed to some extent through efforts to promote more compact, mixed-use development and redevelopment of underutilized properties.
- The presence of Burlington International Airport and I-89 in the City continues to provide a strong foundation for the City's economy and future economic development efforts. However, there is potential for capturing more "visitor dollars" within the City with improved facilities and amenities.

Inventory

Economic Profile. South Burlington is home to a diverse array of small, medium, and large businesses. In 2014, the Vermont Department of Labor counted more than 1,100 establishments and approximately 18,200 jobs in the City (this figure, however, does not reflect all businesses and employment in the City as it excludes the self-employed and many small businesses with no additional employees). South Burlington has maintained a fairly steady rate of economic growth over the past three decades, which is partially due to the fact that the community's economic health is not dependent on a single large employer or business sector.

Strong increases in employment in South Burlington have resulted in the City becoming an employment center in the region. The City's daytime population exceeds its nighttime population by approximately 7,000 people.

Employers. The City is home to a wide range of employers, from many small businesses, to headquarters of several national and international firms. The Burlington-South Burlington Metropolitan Statistical Area was home to 5,852 firms in 2012. Of these, 4,645 employed fewer than 20 people. Conversely, there were 440 firms that employ over 500 persons nationally and accounted for nearly 50% of the entire workforce. In recent years, employment in the office, service, and medical fields have been strong in South Burlington. A handful of high tech manufacturers have also located or expanded in the City in recent years.

Employment. Total employment was steady and increased by approximately 400 jobs in South Burlington between 2009 and 2014, according to the Vermont Department of Labor. Since 2000, jobs have increased by approximately 1,000, after robust growth in the early-mid 2000s and a decline around the recession of 2008. The majority of the job growth in the past 15 years has been in the Health & Educational Services and Professional and Business Service sectors, which grew by approximately 1,400 and 700 jobs respectively. The Manufacturing and Construction sectors declined by nearly 900 jobs between 2000 and 2010, but has rebounded by 200 jobs in the five years since. The Retail and Leisure & Hospitality Sectors have seen small declines in total numbers and a drop in the proportion of total jobs in the City in the past 15 years, from roughly 36% of the total to 30%.

Wages. Wages in Chittenden County are notably higher than those for the remainder of Vermont. South Burlington's average household wages in the years 2010-2014 are slightly below the Chittenden County average, however, according to the Vermont Department of Labor. It is possible that this is a reflection of the high number of one- and two-person households in the City.

Labor Force. South Burlington is an employment center and a net importer of workers from throughout the region. Of the people working in the City, approximately 18% live in South Burlington and 17% live in Burlington. Another 27% live in Colchester, Essex, Milton, and Winooski. Most of the remaining workers commute from towns throughout Chittenden, Franklin and Addison counties.

Where local residents work and where workers come from to work locally is highly indicative of established economic and trade patterns. A large majority of South Burlington residents who work do so within a relatively small area, with 89% working in South Burlington, Burlington, Essex, Colchester or Williston. This is an advantage of living in the midst of a major job center. In contrast, workers who commute to South Burlington do so from a broader geographic area, including a number of regional communities that are rural in nature and which have very little local employment.

South Burlington and the immediately surrounding communities constitute Vermont's principal job center. As such, local residents are generally able to commute short distances to good jobs. However, the attraction of this job center draws in a

substantial number of workers from surrounding areas. These workers create market potentials for City businesses.

Commercial and Industrial Development. South Burlington has experienced steady non-residential growth since the 1980s. Since 2000, non-residential development has added approximately 1.1% to the Grand List each year.

Retail Sector. The Retail Sector, with 3,310 jobs (18% of the total) in 2014, remains the highest single employment sector in the City. Its share of total employment in the community has dropped slightly over the past decade. This is likely a reflection more of the growth of other sectors, though the retail Sector itself has dropped slightly in actual numbers as well. Retail sales have seen steady increases in the past 5 years, to approximately $332 million in 2014. This represents 21% of all retail sales in the County.

Professional and Business Services Sector. The professional and business services sector is the City's second largest employer accounting for 17 % of jobs. This sector has also been the among the fastest growing in recent years.

Educational and Health Services Sector. The educational and health services sector is the fastest growing sector in the City. As of 2014, it accounts for 12.5% of all jobs in the City and has increased by nearly 1,400 jobs since 2000.

Travel Sector. Chittenden County's travel profile differs from the remainder of the state because a relatively high component of the region's travel activity is generated by business and commercial, rather than tourist or recreational, travel. The region's travel activity is distributed relatively evenly throughout the year, so travel oriented businesses in the region can count on a steadier flow of business without significant seasonal fluctuations. South Burlington is not regarded as a tourist destination, but the City benefits from a combination of travel factors (the proximity of the airport and interstate) and a location with good access to many of the region's major employers.

The lodging industry has a major presence in South Burlington. Leisure and Hospitality jobs represent 12.5% of the total employment in the City. That figure has declined slightly in the past 15 years, in both the share and total amount.

Analysis and Challenges

Balanced Growth. It has been South Burlington's objective to balance residential and non-residential development in order to maintain a more stable tax rate for the City's property owners. The City has generally aimed for, and largely achieved, a one-to-one ratio between the value of residential and non-residential property.

While the one-to-one ratio has been a long-time objective of the City, recent changes in the state's education funding formula have somewhat reduced the benefit the City's residential property owners receive from South Burlington's large non-residential tax base. Further analysis is needed to determine if this objective should be adjusted in future years as the State's education funding formula continues to evolve.

Burlington International Airport. Lodging managers in the City indicate that the Burlington International Airport is a significant factor for them in terms of business generation. Activity at the airport has increased in recent years, a factor of physical improvements and the emergence of discount airlines as a factor in the aviation industry. Airport enplanements increased at an annual rate of 5.2 % between 2000 and 2003 and approximately three to four percent from 2003 through 2008, the start of the economic downturn. In the two years that followed, airport enplanements dropped due to economic conditions, runway reconstruction, and national trends. The airport's master plan anticipates a long-term trend of three percent annual growth in enplanements. This master plan is evaluated on a periodic basis.

Economic Development Organizations. The City supports several organizations devoted to promoting economic development including the Greater Burlington Industrial Corporation (GBIC) and the Lake Champlain Regional Chamber of Commerce. In 2014, the South Burlington Business Association was formed as a local non-profit, membership organization. The City has been an engaged member of the organization.

Economic Vitality and Quality of Life. It is important to note herein that the economic viability and quality of life in South Burlington is intricately tied to many other aspects of this plan. Notably among them are community services, public infrastructure, housing affordability, energy-efficiency, and renewable energy." Quality jobs draw a quality workforce, who in turn need and deserve safe and affordable housing. These employees need and deserve access to public services, including emergency services, and access to multiple modes of transportation. New employment centers require reliable infrastructure for their employees, customers, and products. The City acknowledges and prioritizes each of these, and this plan provides more details for each in the relevant chapters.

Future Needs and Trends

Aging Workforce. While South Burlington boasts a younger demographic than most Vermont communities, the aging of the workforce over the next several decades is anticipated to be a challenge to businesses statewide. As the baby boom generation leaves the workforce, employers will need to replace them with younger workers. A lack of affordable housing and available job opportunities that match the education and skills of Vermont's young adults have led many to leave the state to start their careers for more than a decade. This trend, if not reversed, could result in a very tight labor market in which businesses are unable to attract the workforce necessary to sustain and grow their operations.

Mixed Use Areas and City Center. The City Center area represents an opportunity for high quality employment in an urban setting. The City has not previously had this particular environment, with professional employment opportunities slated to be closely tied to a walkable downtown with services, retailers, restaurants, and housing. This will be an opportunity for the community to experience a new market.

Transportation-Land Use Connection. Future employment and mixed-use development will necessitate a transportation system that meets the demands of the local and regional area. Future mixed-use employment centers in areas such as City Center, along Kimball Avenue, Tilley Drive, Williston Road, and Shelburne Road should be planned alongside needed transportation improvements and be designed to be walkable and bikeable both within the corridors themselves and efficiently connected to adjacent local and regional housing and employment centers.

Additional Resources

- **2015 City of South Burlington Identity Study**

Economy Objectives

Objective 6. Continue to be an economic hub for the region consistent with the land use goals of the City.

Objective 7. Maintain a balanced ratio of residential and non-residential sectors of the grand list in order to provide quality municipal services at a manageable property tax rate.

Objective 8. Maintain a stable and proportional tax for existing and future residents and businesses.

Objective 9. Be a good partner with businesses in helping them locate in South Burlington or continue to grow here.

Economy Strategies

Strategy 14. Engage in an active employer visitation program where senior City staff are meeting on a regular basis with South Burlington businesses in order to understand the factors, pressures and opportunities that affect their growth and prosperity. Focus discussions with employers on initiatives that the City can take to support the growth of their business. Consider sector-wide meetings on a quarterly basis with identified employers to understand specific industry trends and to bring like employers together in a way that can provide mutual support for growth.

Strategy 15. Conduct a comprehensive analysis of City regulations relating to permitting with an eye toward ways to eliminate outdated or duplicative requirements and to further streamline the process of obtaining needed permits with a specific focus on improving predictability of the process. Move as much of the permitting process online as is viable to improve customer access and service.

Strategy 16. Conduct a comprehensive analysis of all fee requirements tied to the local permitting process to ensure that fees are both appropriate to the service being provided and competitive with neighboring communities and the state.

Strategy 17. Develop transportation capacity across all transportation modes including bike, pedestrian, transit and autos. Make investments in additional infrastructure that adds capacity where growth is occurring or where it is planned to occur that reduces ride times and promotes connectivity.

Strategy 18. Identify one or two key business clusters where combined efforts could lead to business recruitment opportunities that tie into that cluster.

Strategy 19. Bring business leaders together with the School District leadership to develop a robust school to work program that could include focused coursework, intern and apprenticeships, job shadowing, career advising and development and other means to facilitate student transitions to work environments. Have biannual meetings between school and business leadership to understand and anticipate changes in the work environment and the demand for new or evolving skills.

Strategy 20. Conduct a comprehensive study of the cost of delivery of all local public services to ensure that the very best value is being provided to all taxpayers including employers. Look for opportunities to provide the same or better quality of services to all taxpayers at a reduced cost. This value driven approach to providing public services will create a more welcoming environment for business development.

Strategy 21. Work with hospitality leaders to evaluate the opportunities for a public-private partnership to increase convention or athletic event infrastructure that will improve our ability to attract right sized conventions, athletic and cultural events to our community.

Strategy 22. Work with adjoining municipalities and regional entities to resolve potential spillover effects resulting from economic growth and development.

Strategy 23. Brand and actively market the City with the community vision and image expressed in this plan.

Strategy 24. Develop a strategic economic development plan for the City.

D. Community Facilities and Services

One of the purposes of a comprehensive plan is to identify services currently available to City residents, evaluate the effectiveness of the municipality and other providers in delivering those services, anticipate future demands and assess whether those demands can be met efficiently and without negatively impacting the fiscal health of the City.

Overview

Key issues and needs related to the provision of community facilities and services include:

- City administration (including the Recreation Department, City Clerk's office, Planning and Zoning, City Attorney, IT, City Manager's Office, and the Tax Department), the Library and School District all have identified needs for improved and/or expanded facilities that will need to be met in the near future. This poses both a challenge and an opportunity for the City. It will be a challenge to fund multiple improvements simultaneously and to prioritize those needs. Yet, there is the opportunity to address multiple needs with a single solution, which could be more efficient and cost-effective in the long-term. There is also the opportunity to better align provision of key community facilities and services with the City's vision and future goals such as development of City Center, creating an identity for South Burlington, energy efficient and green civic buildings, improved walkability and transit, enhanced quality of life, etc.
- The need to balance efficient and cost-effective use of school facilities with the strong desire of parents and students to retain neighborhood schools is increasingly important in light of state education funding and budget constraints, facilities that are approaching capacity, and continued residential growth.
- It will be necessary to continue monitoring growth against the City's ability to provide facilities and services without burdening current taxpayers. New development should continue to "pay its own way" to the greatest extent feasible, with recognition that there may be community benefits (e.g., job creation or affordable housing) that offset community costs that also need to be considered.

Inventory

City Government. South Burlington's officials and staff work largely from the City Hall building at 575 Dorset Street. The condition of the City office building at 575 Dorset Street and the adequacy of its facilities to meet the City's needs has been an identified issue for a number of years, but has recently undergone significant upgrades which are expected to serve as adequate for several more years.

Public Works. The Department of Public Works is responsible for maintaining City streets (including signs, lighting, and traffic lights), parks and recreation paths, stormwater systems, two sewer treatment plants and associated collection systems,

water distribution systems, and gravity sewer lines. The department also maintains City and school district vehicles. South Burlington has a joint municipal/school district Public Works facility, constructed in 2001 at 104 Landfill Road. The facility represents a cooperative relationship between these two public entities that has allowed for increased efficiency and economy of scale.

Police. The city established its Police Department in 1953 with the hiring of a single officer. The department has grown with the city and now includes 43 sworn officers in addition to civilian staff. In 2010, the Police Department relocated to the newly constructed police facility at 19 Gregory Drive, a space that was designed to serve well in to the future.

The Police Department provides primary law enforcement services throughout the city, with the exception of the Burlington International Airport, which is served by the Burlington Police Department. The Police Department maintains excellent working relationships with municipal, county, state and federal law enforcement organizations. Mutual aid and collaboration are regular occurrences between agencies.

In addition to traditional policing services, the department operates a number of specialize programs and engages in multiple community outreach programs. These include a Youth Services Unit, Traffic Safety Unit, Detective Bureau, D.A.R.E., summer youth camps, K9 Unit, Communications Center, and regular community outreach. The Police Department also serves as the home of the South Burlington Community Justice Center (CJC). The CJC hosts reparative panels, provides mediation services, and assists with offender re-entry through Circles of Support and Accountability.

The Police Department is committed to expanding programs that support the community and is the only police department in the region offering Project Good Morning. Project Good Morning is a program where elders are in daily communication with the dispatch center. If contact is not made by telephone a police officer check on the well-being of the participant. Officers regularly participate in community events, neighborhood block parties, and safety presentations. The Police Department values community partnerships and collaboration that best serves the citizens.

Fire and Rescue. The South Burlington Fire Department (SBFD) provides primary fire, medical and specialized rescue response throughout the City. It also serves the civilian buildings at the Burlington International Airport (runways and military buildings have the Vermont Air National Guard Fire Department for primary response). In addition, the department supports all the surrounding communities and the Air National Guard Fire Department, as part of written mutual aid agreements. In turn, these same organizations support SBFD in large emergency incidents.

The Fire and Emergency Services Department maintains full-time personnel. Two fire engines and one ambulance are staffed 24 hours per day. Personnel are called out to staff additional emergency vehicles when greater response is needed.

The City has two fire stations:

- Station #1 is located in the City Hall complex on Dorset Street. This facility was refurbished and expanded in 2005 to better house the new ambulance service. Today, with the addition of personnel through the SAFER Grant in 2008, Station #1 meets current space needs. Additional personnel or vehicles will require additional space to be added in the future.
- Station #2 is located on Holmes Road, off Shelburne Road. This station reduces response times to the southwestern end of the City, an area with a significant volume of emergency incidents. Station #2 does not meet current space needs. The second floor of the station was built partially finished and needs to be completed. Upon completion, Station #2 will meet current and future needs of the station's coverage district.

Commercial and residential fire insurance rates are affected by the Insurance Services Office (ISO) rating system. ISO guidelines and that of the National Fire Protection Association (NFPA) are used when planning vehicle and equipment purchases. Building inspections, new construction, electrical inspection, and fire code enforcement is provided by the South Burlington Fire Marshall's Office and the State of Vermont Division of Fire Safety. For the purposes of development review, the department uses the Vermont fire safety standards. Maintaining high standards throughout the City has contributed significantly to lowering losses of life and property due to fire. Currently, the SBFD annually inspects all businesses that apply for a liquor license and provides assistance to residents for safety equipment and information.

Medical Facilities. Hospital health care is provided by two major regional hospital units of University of Vermont Medical Center (UVMMC). The main hospital is located on the UVM campus in Burlington. The other unit, the former Fanny Allen Hospital, is located in Colchester.

In South Burlington, several private doctors offices complement a recently-developed UVMMC annex on Tilley Drive. This complex of buildings provides specialized out-patient care.

Emergency Preparedness and Response. The City of South Burlington actively embraces a four-phase strategy of emergency preparedness and response: mitigation, preparedness, response, and recovery.

Mitigation. Mitigation forms the link between emergency management, infrastructure and land use planning. The City adopted its first All-Hazards Mitigation Plan (as an annex to the Chittenden County All-Hazards Mitigation Plan) in 2005 and has worked with the CCRPC to maintain current plans since. That plan identifies a wide range of potential risks to the City and assigns a likelihood and a scale of damage to each. Using this matrix, the plan presents a series of actions that can be taken by the City, its residents, and its businesses to lessen the likelihood and impacts of future incidents.

The plan includes a hazard risk assessment that measures both the likelihood and potential severity of different types of large-scale emergencies in the City. The analysis revealed severe winter storms, gas and/or electric service loss, and flooding as among

the large-scale hazards that warrant the greatest attention. A series of goals and actions to help reduce the impacts of these and other types of emergencies are included in the Mitigation Plan and, where appropriate, are incorporated into this Comprehensive Plan and other City policies, programs, and regulations.

- Flood resiliency. As used in this document, and per the 2013 guidance document for Disaster Recover and Long-Term Resilience Planning in Vermont, flood resilience references measures taken to reduce the vulnerability of communities to damage from flooding and to support recovery after an extreme event. Due to its geography and elevation, South Burlington doesn't face the same level of risk as many of the more vulnerable communities in Vermont. Still, it has and shall continue to plan for flood resiliency in earnest. Elements of mitigation employed in the City include general land use planning and zoning; a restriction on development within primary conservation areas, including river and stream corridor buffers and setbacks and mapped flood plains; restricted development along Lake Champlain; extensive Low Impact Development stormwater standards and the state's first Stormwater Utility which continually assesses and upgrades city stormwater infrastructure; a watershed approach to surface water and stormwater management; robust landscaping requirements and cyclical assessments of tree canopy; smart growth approaches including clustered housing and channeled development in a designated New Town Center; coordination with neighboring communities; and active participation in the regional All Hazards Mitigation Plan with timely detailed local updates. All of these elements may be found throughout this Comprehensive Plan, with specific references, objectives and strategies related to surface and stormwater planning in the 'Blue Infrastructure' chapter.

Preparedness. Emergency preparedness and response activities in South Burlington are coordinated through the Fire Department and Police Department. In addition to ongoing training within these departments, the City regularly works with the School District, senior housing groups, and local organizations such as the Red Cross to enhance public preparedness. South Burlington has also been an active participant in the Chittenden County Local Emergency Planning Committee, an organization responsible for coordinating emergency preparedness at the regional level.

The City maintains an up-to-date Emergency Operations Plan that spells out strategies for alerting the public of emergencies and identifying the scope of responsibility for various departments. This plan also identifies potential shelter locations, which include schools, churches, and other large community buildings. In most cases, these shelters have been approved by the American Red Cross, allowing them to set up and manage the shelter in the event of an emergency. The City also maintains an Emergency Operations Center at the Public Works facility.

In addition, the South Burlington Fire and Rescue Department and Public Works Department are regular participants in the local development review process, providing input to the Development Review Board regarding the location and access of buildings, roadways, and other safety-related issues.

Response. Emergency response in South Burlington is primarily the responsibility of the City Police Department and Fire and Rescue Department, with support from the Public Works Department, the Vermont Agency of Transportation, and mutual aid response partners. The roles of the City's departments are described in their individual sections within this chapter. Emergency dispatch is managed through the Police Department, and systems are redundant to Burlington in case of need.

Recovery. Recoveries from large-scale incidents in the City have generally been related to flooding. South Burlington has worked diligently, through its Stormwater Division, to address the causes of wide-scale flooding incidents.

Library. The City's community library is located in the northern wing of the South Burlington High School on Dorset Street. It is a combined public and high school library.

A cornerstone of the community, the library offers programs for children of all ages, adult reading groups, live performances, educational programs, Wi-Fi, digital books and magazines, subscription databases, access to computers and printers, technological assistance, and free passes to cultural institutions. Library usage continues to increase as we stay abreast of emerging technology, providing quality information resources in a variety of formats. Books remain in high demand and in FY 2014 the Library circulated over 134,000 items.

The Library is open six days a week, 58 hours per week, and has 5.8 full-time equivalent employees. There are over 70,000 items in the collection. The SBCL is a hub for information, entertainment and social connection - in FY 2014, over 85,000 people visited the library. The Library is evolving and growing with the community, contributing to the future of South Burlington as a vital part of the proposed City Center.

The City is planning resources to support the building of a new Library. While the Library focus will remain on sharing books to provide information and inspiration, the new Library will also be a technology gateway, supporting organized on-line information sources for workforce development and other web-based educational opportunities. The future space will include room for meetings, performances, quiet reading space and collaborative learning. An early childhood "Literacy and Play" space is under consideration to support families with children under five, while teens and new adults will be the focus of a Digital Exploration space. A community auditorium is planned to promote author visits and local performances. All told, the Library will be a cornerstone of the South Burlington community.

Childcare. The majority of South Burlington's parents are working outside the home. According to the 2011 Census Bureau's Survey of Income and Program Participation (SIPP), 88 % of children of mothers who worked required day care or after-school care, with 25% of those utilizing organized child care centers. Parents commuting to jobs in South Burlington may prefer to enroll their children in childcare programs close to their workplace. The result of these factors has been an increasing demand for childcare and after-school programs to meet the needs of working parents and their

children. Within Chittenden County, it is most difficult to find care for children from infancy to age three.

Child Care Resource is a nonprofit human service organization located in Chittenden County. It helps families and providers make child care connections, strengthen early learning opportunities by working with early care and education providers, and create child care solutions for communities. Each day, about 6,500 Chittenden County children attend a child care or after-school program and:

- 30 % live in poverty
- Some have experienced abuse, neglect or homelessness
- Some are new Americans
- Some have developmental, physical, emotional or behavioral challenges

Child Care Resource recently completed a study for the South Burlington School District assessing early childhood education, of which childcare is a component. The study and its working group revealed a trend of families with young children seeming to leave South Burlington before the children reach school age. It also identified potential opportunities to support young children and their families so that children enter kindergarten eager to learn and ready to participate.

Child Care Resources provided the City with the following statistics about the supply of child care in South Burlington, as of 2011:

- **Licensed Child Care Centers.** There are three child care centers providing full-day care for children ages birth to five. Among those, there are 158 slots and a vacancy rate of one percent All three have been recognized for quality. Two participate in Vermont's Step Ahead Recognition System (STARS) and of those, one has attained 3 STARS and one has attained 5 STARS (the highest level of STARS). Two of the programs provide publicly funded prekindergarten in partnership with the South Burlington School District and one is working toward this goal.

- **Registered Family Child Care Homes.** There are eight registered family child care homes that also provide full-day care for children ages birth to five. Some provide care for school age children up to age 12 as well. Among those there are 64 slots and a current vacancy rate of five percent. Two of these programs have been recognized for quality, one at the 3 STAR level and one at the 5 STAR level. Two of the programs provide publicly funded prekindergarten in partnership with the South Burlington School District and Child Care Resource.

- **Licensed Family Child Care Homes.** There is one licensed family child care home that provides full-day care for children ages birth to five and part-day care for school age children. This program has 12 slots and a current vacancy rate of zero percent. It has 4 STARS and provides publicly funded prekindergarten in partnership with the South Burlington School District and Child Care Resource.

- **Licensed Preschool Programs.** There are five licensed preschool programs that provide part-day and full-day options for children ages three-five. Among those, there are 104 slots and a current vacancy rate of five percent. Four of the five programs hold 5 STARS. All but one of the programs provides publicly funded prekindergarten in partnership with the South Burlington School District.

- **Licensed After-School Programs.** There are five licensed after-school programs providing part-day care for children ages 5-12. Among those, there are 225 slots and a vacancy rate of less than one percent. One of the programs has received quality recognition of 3 STARS.

The provision of safe, local, and accessible childcare and pre-school is a vital element in attracting families to South Burlington. As such, the City endeavors to ensure that high-quality and affordable childcare is available within its borders. The policy of the City shall be to undertake actions to assist in this provision.

Lands, Parks, Natural Areas within the City. The following is an inventory of parks, open space lands, and associated facilities within the community. They are organized below by a hierarchy of function within the community as described within each. They are further organized by their principal existing and planned uses as described in the pull out box within this section.

Principal Existing & Planned Uses:

- **Natural Areas.** Natural areas have generally been historically undeveloped, though most of the land in the region was logged and farmed for some portion of its history. Many contain unusual communities of plants and animals, rare species, and exceptional geological features, while others serve as part of wildlife corridors, refuges, or habitat areas. Each of these are publicly owned, University-owned, or privately conserved. Future needs for natural areas are identified within the Ecological Resources section of this Plan.
- **Active Recreation.** Active recreation areas generally provide one or more facilities geared towards physical activity, such as ballfields, basketball and tennis courts, playgrounds, rinks, beaches, and tracks. Future needs for active recreation facilities are identified within the Recreation section of this Plan.
- **Passive Recreation.** Passive recreation areas such as tracts of lands with walking and hiking trails, undesignated fields, picnic sites, and viewing areas. They may be associated with natural areas, active recreation, or may be their own sites. Future needs for active recreation facilities are identified within the Recreation and Ecological Resources section of this Plan.
- **Agriculture.** Agricultural areas include uses such as larger-scale farming, community-supported agriculture, and community gardens. They may be associated with natural areas, active or passive recreation, or may be their own sites.
- **Other.** Additional lands listed within this section of the plan are specific to individual owners or sites such as educational facility, research, private recreation, community center.

City Parks, Lands & Facilities. City parks and natural areas are those owned by the City and designed as gathering points for community events and activities and are typically intended for regular enjoyment by residents throughout the City and region. The following are all owned by the City.

- **Veterans Memorial Park (uses: active recreation).** A 70-acre city park providing both passive and active recreational activities, located immediately south of I-89 and east of Dorset Street. The 70-acre City Park currently has two soccer fields, one regulation and two youth baseball fields, open field spaces, two indoor ice arenas (privately operated), a playground, a community bandshell, a Veterans' memorial, picnic pavilion with tables, rest rooms, and a solar array.

- **Red Rocks Park (uses: passive recreation, natural area, limited active recreation).** 100 acres on Shelburne Bay; it is mostly wooded kept in natural condition with walking paths and hiking trails. It includes 700 feet of public beach, picnic areas, and parking areas. A management plan for the park's future use and maintenance was recently completed.

- **Overlook Park (uses: passive recreation).** 1.7 acres located on the west side of Spear Street, north of Deerfield Drive. It contains viewing areas and picnic tables and has parking.

- **Community Dog Park (use: active recreation).** Established in 2010, the Community Dog Park is located at the east end of Kirby Road. It includes a parking area and fenced areas for exercising large and small dogs on land leased from the City of Burlington.

- **Wheeler Nature Park (uses: natural area, passive recreation, limited agriculture).** This 100+ acre parcel is located at the corner of Swift and Dorset Streets and lies adjacent to Veterans Memorial Park. It is a designated natural area intended to be conserved in perpetuity by a third party permanent conservation easement. The park includes the Wheeler Homestead, a historic building with office and other space with affiliated community and display gardens and a city tree nursery. A management plan for the park's future use and maintenance was recently completed.

- **Oak Creek Properties (current use: passive recreation, natural area; planned uses: natural area, to be determined).** This land includes three (3) separate parcels owned by the City. The southerly parcels are wooded natural areas designated as permanent open space; the northerly parcel is half wooded and half open fields and is not formally designated by the City. It has at times been considered as a school location. Proposed Action: development of management plan

- **Scott Property (current use: natural area, planned use: To be determined based on management plan).** Acquired by the City in the mid-2000s, this 40-acre open space property serves as part of a wildlife corridor that extends

from Shelburne Pond towards the Wheeler Nature Park. A small pond is located on the parcel. The property was purchased with the City's Open Space funds. A management plan has not yet been developed. Proposed Action: development of a management plan

- **Underwood Property (current uses: agriculture; planned use: to be determined).** Acquired by the City in 2013, this 60-acre property includes open fields, woodlands, wetlands, and spectacular views of Lake Champlain and the Adirondacks. The property was purchased with the City's Open Space funds. The City appointed a committee to develop a preferred vision for the plan, for which a report and related graphics were released in the spring of 2015. A management plan was identified as the next step, but has not yet been developed. Proposed Action: Development of master plan.

- **South Burlington High School-Middle School (current use: educational facility, active recreation).** This 80-acre parcel includes school buildings, the community library, several fields designed for baseball/softball, football/soccer/lacrosse, etc., a running track, tennis courts, and additional facilities. When not in use by the school district or otherwise leased out, they are available for public use.

- **Municipal Building Sites:** See specific sections on City government, public works, police, and fire/rescue

- **City wide Parks, Lands & Facilities not owned by the City or schools.** These lands and parks serve an important City-wide role in the community. Some of these lands are designated for conservation and public use, while others are used or planned for agricultural and research facilities and may not be regularly open to the public. Still others are undesignated by the University.

    - **University of Vermont Lands:** The following lands, and others, are owned and operated by the University of Vermont and are detailed in the University's Campus Master Plan in greater detail.

        - **East Woods (uses: natural area, passive recreation, research, education)** is a 40-acre parcel with an old-age stand of hardwoods with groves of huge hemlock and red pine. A great variety of shrubs, including viburnums and dogwoods, grow here along with a rich herbaceous flora. This type of forest is considered to be rare and is of local, regional and state importance. In April 1971, the University Board of Trustees adopted a resolution designating East Woods a Natural Area.

        - **Centennial Woods (uses: natural area, passive recreation, research, education).** Centennial Woods is a 40-acre forest site of old-age softwoods dominated by white pine, red pine and hemlock. Hardwoods characterized by red maple make up the understory. Forests such as this are not uncommon. It is considered to be of local, regional and state importance. It was designated by the University Board of Trustees in April 1971 as a Natural Area.

- **Blasberg Horticultural Research Center Site (current uses: research, education, agriculture; planned uses academic/ residential).** This 97-acre site is owned and operated by the University as a agricultural and horticultural research and education center. This area contains extensive orchards, ornamental trees and shrubs and natural woodland areas, meadows and ponds. The farm offers a diverse wildlife habitat and is a stopover for migratory birds. A prehistoric Native American village and artifact site are also located on this land.

- **Miller Research Farm Complex (current uses: education, agriculture; planned uses: academic, undesignated).** This 68-acre parcel contains the main farm buildings and is used for education, research and outreach and includes a dairy herd, additional animals, solar research, and more.

- **BioResearch Complex (current uses: research, education, agriculture; planned uses academic).** This 51-acre parcel includes land leased to USDA Forest Service, solar power generation facilities, and agricultural cropland, among others.

- **Edlund 1969 Tract (current uses: forested; planned uses: unassigned).** This site is an example of Pleistocene "fossil" sand dunes, associated with the Champlain Sea about 10,000 to 12,000 years ago. This sand dune field is located predominantly on UVM land on the west side of Spear Street approximately midway between I-189 and Swift Street. The occurrence of this phenomenon is rather rare and the report of the VNRC states that this site is in need of physical management to maintain its unique state. This sand dune field exists in a sensitive and fragile form within an urban environment. These dunes are considered to be significant on both the local and state levels.

- **Main Campus (use: academic, residential)** Portions of the main campus, including athletic fields, parking, tracks, etc., are located with the City of South Burlington along Spear Street.

- **Additional sites – Deslauriers Tracts, Martin Tract, Whittlesey Tract, VonTurkovich Tract, Wheelock Tracts, Centennial: (current uses: natural areas, research, agriculture; planned uses: various).** These tracts all form part of the University of Vermont's land bank and have various academic uses.

- **Vermont National Golf Course (uses: private recreation, public recreation use in winter).** A private golf course, City residents are permitted to make use of the Vermont National Golf Course fairways for snowshoeing and cross-country skiing during winter months when there is snow on the ground.

Community Parks, Lands & Facilities. Community parks, facilities, and lands are those that are designed for organized activities and sports, or serve as focal points for activity in various parts of the City. While they are generally open to residents and visitors from across the City and region, their principal use is from nearby neighborhoods.

- **Farrell Park (use: active recreation).** A 22.89 acre park, located on Swift Street; developed facilities include a fenced youth baseball field (little league size) a regulation size field that can be used for baseball, softball and soccer, and a playground and picnic tables. The Recreation Path goes through this Park. Parking is available.

- **Jaycee Park (uses: active recreation, community center).** A 6.9 acre facility on Patchen Road; it has one lighted youth baseball/adult softball field, small picnic area with shelter, basketball courts, playground, parking, an adjacent building with heat and rest rooms, and an open field area for field sports. The O'Brien Center is available for community meetings and special events.

- **Dumont Park (uses: natural area, passive recreation).** This relatively small, City-owned parcel sits between Iby Street and San Remo Drive. It is located south of Tributary 3 to the Potash Brook and areas that have been identified for future recreation associated with City Center. A community planning effort is underway and a concept design has been approved. Proposed Action: completion of park design and construction of park amenities.

- **Mayfair Park / Kennedy Drive Natural Area (uses: natural area, passive recreation).** This area encompasses approximately 50 acres of land on the northwest side of Kennedy Drive. Potash Brook runs through this land and there are many natural springs forming a wetland. Forest cover contains white pine and some mixture of hemlock, elm and red maple trees. This natural area was accumulated over the course of several years, having been initially identified as a natural area in the "South Burlington Natural Resource Inventory", September 1967.

- **South Burlington High School Natural Area (uses: natural area, passive recreation).** Located on the north side of Kennedy Drive, east of the High School playing fields, this natural area serves as an important part of the Potash Brook tributary system with substantial wetland areas, large stormwater treatment areas, and a walking trail linking the school to nearby neighborhoods. The property is owned and maintained by the School District.

- **Goodrich Property (current uses: natural area, passive recreation; planned uses: wetland restoration).** Acquired as a permanent public easement by the City of South Burlington in 2010, this 22-acre open space site lies immediately north of the Muddy Brook Natural Area. It includes wetland areas, riparian banks, and various open and forested areas.

- **Orchard School (uses: educational facility, active recreation).** Owned and operated by the School District, this 13.5 acre facility includes school buildings, a basketball court, a ball field, gardens, and playground equipment.

- **Central School (uses: educational facility, active recreation).** Owned and operated by the School District, this 12.1 acre site includes the school building, playground equipment, a ball field, and multiple-use field area.

- **Chamberlin School (uses: educational facility, active recreation).** Owned and operated by the School District, this 10 acre property includes the school building, a basketball court, playground equipment, ball field, and multiple-use field area.

Community Parks, Lands & Facilities Not Owned by the City or School District. These lands and parks are owned by separate entities from the City and/or school district, but are open to the public for enjoyment. They typically serve a more localized population than City-wide facilities due to their size, accessibility, location, or intended intensity of use.

- **Muddy Brook Natural Area (uses: natural area, wetland mitigation, passive recreation).** Owned and operated by Winooski Valley Parks District, this natural area was purchased and restored for its wetland features by the Burlington International Airport. Situated along the west bank of the Muddy Brook, it includes a clayplain forest area and walking trails for public use.

- **Winooski Valley Parks District Lime Kiln Park (uses: passive recreation, natural area).** Owned and operated by Winooski Valley Parks District. Situated on the west side of Lime Kiln Road immediately south of the Winooski River, this small public natural area and walking trail is perched high above the Winooski River with dedicated parking and an overlook onto the river.

- **Winooski Valley Parks District Muddy Brook Outlet (uses: passive recreation, natural area).** This public park is located at the confluence of the Muddy Brook and Winooski River. It includes a carry-in boat launch and a wide range of shrubs and forested areas.

Neighborhood Parks, Lands & Facilities. Neighborhood parks are publicly-owned, generally lightly developed or undeveloped recreational facilities that are intended to be focal points of local neighborhoods. Most users walk to these parks, though limited parking is provided in some cases.

- **Szymanski Park (uses: active recreation, passive recreation).** Twenty (20) acres in the south end of the City, reached by way of Andrews Avenue or Cranwell Drive. Park includes two lighted tennis courts, picnic tables, basketball court, tot lot, parking and fitness trail. The Recreation Path goes through this park.

- **Garvey Property (uses: passive recreation, natural area).** The Garvey property sits on Williston Road between Victory Drive and Mills Avenue. It is a small, linear, City-owned parcel connecting Williston Road and two parts of a long-established residential neighborhood.

- **DeGraffe Property (uses: passive recreation, natural area).** Located at the end of Duval Street and southeast of Queensbury Road, this small City-owned property is surrounded on all sides by residential neighborhoods. Its topography includes steep banks that fuel tributaries to Centennial Brook.

- **Quail Run (uses: natural area).** Located at the end of Quail Run, this parcel includes one principal walking path connecting to private property to the east and a series of informal trails in the vicinity of the Bartlett Brook. It includes multiple steep banks.

Small lot sites. Neighborhood pocket properties, in most cases publicly-owned, undeveloped recreational facilities that are either intended to be accessible to local neighborhoods or serve a current or future neighborhood function. No parking is typically available.

- **Baycrest Park (current use: passive recreation; future uses: possible active recreation).** Small neighborhood play area (1.69 acres) located at the intersection of Baycrest Drive and Bay Court. It is presently maintained as an open field. Future use would be determined by development of a park plan.

- **Queen City Park lot (current use: unassigned; future use: unassigned).** This house-lot parcel is presently undesignated by the City.

- **Allen Road Park (current uses: passive recreation; planned additional recreational use to be determined).** Small neighborhood open space on Allen Road, west of Baycrest Drive. It is presently maintained as an open field. Future use would be determined by development of a park plan.

- **Butler Farms lots. (Uses: passive recreation, stormwater management).** A series of small parcels located within the neighborhood. Historically open lots, they have recently been given a role in stormwater management for the neighborhood.

- **Queen City Park (uses: passive recreation, active recreation).** Owned and maintained by the Fire District, this 1.4-acre neighborhood play area serves the local neighborhood.

Private Parks, Conservation Lands, and Sports Complexes. A series of private parks, conserved lands, and sports complexes are owned and operated throughout the City. Several homeowner associations maintain facilities for their residents; while a handful of companies and clubs operate facilities for the public or for members. These include tennis courts, swimming pools, gyms, tot lots, community buildings, conserved farmland, and golf facilities. Facilities with specific City involvement include:

- **Vermont National Golf Course (uses: private recreation).** 18-hole Jack Nicklaus Signature golf course, 2 tennis courts, a driving range, a 25-meter junior Olympic pool, and a skating rink. See note above regarding winter access for the public.

- **Rice High School (uses: education, private recreation).** 30 acres, including buildings: includes a baseball field, football field, field hockey area, and running track.

- **Bread & Butter Farm (use: agriculture).** Totaling approximately 140 acres in South Burlington (~80) and Shelburne (~60), this farmland was conserved in 2010 by the Vermont Land Trust, City of South Burlington, and Town of Shelburne. The property was sold to the Bread and Butter Farm by the Vermont Land Trust for operation within an agricultural easement. It is operated as private land. The conservation agreement contains provisions for a public, unpaved recreation path easement connecting Cheesefactory Road to the Scott Property, in a location to be determined.

Recreation Resources. See 2.5C, Recreation Resources, for further discussion of recreational facilities and programming.

Primary and Secondary Schools. High-quality education for all children in the community is one of the most significant and basic services that the City of South Burlington must provide. The school system is actively engaged in planning for its future and maintains a current Strategic Plan. The tradition of close cooperation and communication between the School Board and the various municipal boards and commissions has created the community we have today and is encouraged to be maintained. This is important in light of the shared interest of all City residents in the quality of the education system and in the increasing use of school facilities by community members.

The importance of public education is represented, in part, by the amount of funds allocated to the school system. Public education accounts for approximately 76% of property taxes collected in the City.

The South Burlington School District currently operates five schools that serve approximately 2,500 students in grades K-12, as described below:

- **Rick Marcotte Central School** serves students in grades K-5 from a 12.1-acre site at 10 Market Street. The 59,000-square foot school had an enrollment of 400 students in 2015. The District's 2008 Facility Master Plan determined the school had a program capacity of 420 students. The prior 1998 study had measured capacity at 489 using a different methodology. Each elementary school is forecasted to see an enrollment decrease by 2024, according to the 2014-15 Demographics Study completed for the School District.

- **Chamberlin School** serves students in grades K-5 from a 10-acre site at 262 White Street. The 76,000-square foot school had an enrollment of 246 students. The District's 2008 Facility Master Plan determined the school had a program capacity of 300 students. The prior 1998 study had measured capacity at 425 using a different methodology. Each elementary school is forecasted to see an enrollment decrease by 2024.
- **Orchard School** serves students in grades K-5 from a 13.5-acre site at 2 Baldwin Avenue. The 57,000-square foot school had an enrollment of 376 students in 2015. The District's 2008 Facility Master Plan determined the school had a program capacity of 360 students. The prior 1998 study had measured capacity at 510 using a different methodology. Each elementary school is forecasted to see an enrollment decrease by 2024.
- **Frederick H. Tuttle Middle School** serves students in grades 6-8 from an 80-acre site shared with the high school at 550 Dorset Street. The 111,000-square foot school had an enrollment of 524 students in 2015. The District's 2008 Facility Master Plan determined the school had a program capacity of 625 students. The prior 1998 study had measured capacity at 918 using a different methodology. The 2014-15 Demographics Study forecasts that enrollment is expected to see a decrease by 2024.
- **South Burlington High School** serves students in grades 9-12 from an 80-acre site shared with the middle school at 550 Dorset Street. The 158,000-square foot school had an enrollment of 908 students in 2015. The District's 2008 Facility Master Plan determined the school had a program capacity of 750 students. The prior 1998 study had measured capacity at 1,200 using a different methodology. The 2014-15 Demographic Study forecasts that enrollment is expected to drop slightly to 857 students by 2024.

According to the School District's 2008 Educational Vision and Facility Master Plan, Program Capacity counts the classrooms (or teaching stations at the High School) currently in use for regular instruction, multiplied by the number of District or school standard number of students per classroom. It gives consideration to the educational programs in each building, the space implications of the Educational Vision and reasonable utilization factors at the High School. The program capacity numbers listed above for each school are significantly lower than the figures concluded in the 1998 School Capacity Study, which used different techniques and did not account for high school utilization.

For purposes of planning for future facilities, the district considers enrollment at 90 % of program capacity to be an "action point" at which an additional facility is warranted for consideration.

University of Vermont. The University of Vermont owns 571 acres of land in South Burlington, which is part of its South Campus area. The South Campus is currently utilized primarily for instruction and research focused on bioresearch, agricultural, horticultural and natural areas management.

Analysis and Challenges

Police. The need for and challenge of providing adequate police protection, a fundamental municipal service, increases as the population grows and businesses expand or locate in the City. The increasing pressures on the City caused by population growth, traffic, commercial and residential development all pose significant concerns for local planners, as well as police officials.

It is important that political leaders and the public not develop unrealistic expectations for community policing in terms of crime deterrence or speed of implementation. Community policing calls for long-term commitment; it is not a quick fix. Achieving ongoing partnerships with the community and eradicating the underlying causes of crime will take planning, flexibility, time and patience. Political and community leaders must be regularly informed of the progress of community policing efforts to keep them interested and involved. The police organization must stress that the success of community policing depends on sustained joint efforts of the police, local government, public and private agencies, and members of community. This cooperation is indispensable to deterring crime and preserving the quality of life within neighborhoods.

Fire and Rescue. While there is no such thing as absolute protection, the degree of fire risk should be balanced at an acceptable level as the City grows. The best available source for fire protection standards is the National Fire Protection Association (NFPA).

The City's fire protection plan consists of three components:

- Using NFPA standards for staffing, training, and operating guidelines;
- Using ISO survey recommendations as a guideline for budgeting future operating and capital costs for fire protection, and
- Including fire protection as a criterion in the review of new development (i.e. roads and access, building locations and materials, hydrant spacing, etc.).

Land Development and Emergency Response. It will be important for the community to plan for how emergency response will be able to effectively serve future needs, understanding that development patterns impact response strategies as well as facility and equipment needs:

- New development that is far away from existing stations places greater demands on time and equipment than development that is nearby.
- Need to be prepared for moderate annual increase in calls due to population aging and increased population / businesses.
- As the more mixed use, higher-density development takes place, equipment, policies and training will need to be adjusted.

Library. In 2005, a facility study concluded that the existing library was approaching capacity and would require additional space to continue to function in the community's best interests. The study also stated that the high school benefits more than the community in the combined library model. While the community benefits from the

current model by receiving the school custodial, maintenance and computer services, the study highlighted the significant problems in the combined model which include:

- Lack of quiet reading/study areas;
- Lack of space for programs;
- Lack of parking;
- Excessive noise and a predominance of student use during school hours; and
- School regulations that impact public use of the computers, meeting space and library use.
- Phase II of the facility study, completed in 2006, defined future space needs if the library continues to serve both the public and the high school, as well as to determine the future space needs if the public library were to vacate its current home and construct a new public library. Extensive data was collected from The Wisconsin Public Library Standards (a nationally recognized standard), six community/school focus groups, a library consultant, and interviews with key stakeholders, and a survey mailed to random community members. The City is currently considering if a separate library should be constructed in the City Center area to serve the community.

Primary and Secondary Schools. While the City has not been immune to regional demographic changes like an aging population and smaller families, the quality and reputation of the South Burlington schools continues to attract families to the City. A 1999 survey of families with students new to South Burlington indicated that more than 80 % moved here because of the City's reputation for a quality school system.

Maintaining this reputation will require the city and district to continuously evaluate its educational goals and related facility needs to ensure the desired educational outcomes are achieved within the available funding sources.

There are a number of challenges facing the schools which include shifting student and population demographics, airport and City Center development, continued Southeast Quadrant development, as well as aging and non-compliant facilities. The Steering Committee (City and District jointly) convened the Master Planning and Visioning Task Force to analyze, evaluate, and recommend options for addressing the challenges of 21st century students, which was submitted in August 2015. This report and recommendation are currently under review by the Steering Committee.

Additionally, the ability of families with children to move to the City is directly linked to the availability of affordable housing and employment opportunities. These interrelated factors need to be monitored on an ongoing basis to anticipate changes in enrollment that would trigger a need for expanded or new educational facilities or services.

Though total enrollment in South Burlington has been reasonably steady during the past decade, the next decade is forecasted to be less steady with the possibility of both a fluctuating and declining enrollment. In 2014, a Demographic Study forecasted

a 4% decline in student enrollment between 2014-15 and 2024-25. For planning purposes, this change in demographics will require the district to consider how to increase facility flexibility to maintain appropriate student-teacher ratios and desired educational curricular and co-curricular programming. Potential facility changes could occur at the elementary through high school levels and range from renovation to new construction.

It is possible that one or more elementary schools may become available for repurposing. These properties are potentially located for re-use to meet City needs such as community centers, potential affordable housing development, additional recreation space, or even commercial or private use.

The collective growth and development patterns, most notably continued development in the Southeast Quadrant, changes to the airport neighborhood, and the potential for the development of City Center, are all important considerations as the School District plans for the future of the City schools. The City and District have convened various committees such as the Chamberlin Neighborhood Airport Planning Committee and Master Planning and Visioning Task Force to assist the City and District in their planning efforts. The committee reports considered growing pressures on School and City facilities and infrastructure driven in large part by airport encroachment on residential areas, the desire to develop a vibrant City Center, changing demographics, changing/increasing traffic patterns, and the desire to provide a community-friendly environment.

Information regarding the work of these committees may found on the South Burlington website.

In 1998, a *School Capacity Study* calculated the mathematical maximum capacity of the City's public school facilities is estimated to be 4,165 pupils (1,675 in grades K-5 and 2,490 in grades 6-12). This absolute capacity assumed 25 students per classroom evenly distributed across all grades and all schools. The maximum capacity was adjusted by an effective factor of 85 % to reflect the reality of age, location and scheduling of the student population resulting in a program capacity of 3,541 students (K-12). A decade later, in 2008, the *Educational Visioning and Facility Master Planning* report determined that the district's K-12 program capacity was only 2,455 students (a figure close to recent enrollments). The 2008 report findings provided for and were supported by the work of the Master Planning and Visioning Task Force Report, which confirmed the maximum capacity of the school facilities as 2,455 students.

To ensure equal treatment of developers and to minimize the impact of new housing on school facilities, standards are used to estimate the number of school children generated by new projects. This number is based on the unit configuration (single- or multi-family), unit costs, whether it is renter or owner occupied, and size (number of bedrooms, square footage). The values assigned to these factors are confirmed and adjusted by periodic School District reviews.

South Burlington schools are consistently ranked as some of the best in the state. In order to maintain the quality of the schools, the School District faces several

challenges. The challenges confronting the five schools (3 elementary schools, 1 middle school, and 1 high school) varies from age, location, and layout to utilization, program flexibility, and implementation of state recommendations. The community will need to make a decision regarding the viability of each school and develop a strategy for addressing these challenges.

School finances continue to pose a challenge to the school system, a challenge that has been further complicated by Vermont's statewide education funding system. The changes to the state education funding formula that began with passage of Act 60 in 1997, and more recently Act 46, have increased the difficulties in ensuring the appropriate funding is available for educational and facility needs.

For decades, South Burlington had sought to maintain a 50/50 split between residential and non-residential property value on the grand list in order to spread the cost of community facilities and services across a diverse tax base. Under Act 60, the state education property tax system effectively results in a higher tax rate on residential property as any revenue to be generated above an established 'Based Education Spending Amount' is derived solely from residential taxpayers. The Community can expect further pressures from the State Legislature to contain education spending, which may impact the District's ability to fund educational and facility needs.

University of Vermont. The University of Vermont's Campus Master Plan provides a flexible framework that can accommodate changes in attitudes about campus environments, new technologies and revised institutional requirements. The current plan directly addresses the growth of the campus through 2015, and looks forward to growth in the decades beyond. In 2006, UVM's Board of Trustees voted to approve the current version of the Campus Master Plan.

Chapter 5 of the Campus Master Plan provides an analysis of existing conditions, an analysis of the frameworks identified for campus planning, an overview of the design guidelines established for the South Campus, and an illustrative plan that provides an overview of the university's future vision for the South Campus. The Campus Master Plan has also identified a number of infill land banks to organize future development since the university's needs for academic, housing, administrative and support space will continue to evolve.

Land banks in the South Campus are delineated primarily for two uses: academic and residential. Buildings and their associated infrastructure will fit within these designated areas when and if the university proceeds with a specific development initiative. The residential land banks might have some academic or institutional use associated with them but at this time there are no specific plans for such properties. Alternative housing strategies and joint community partnerships may be a possible consideration for these sites. The East Woods Natural Area serves important environmental and community purposes and is considered a no build zone.

From the City's perspective, the university-owned Centennial Woods Natural Area and East Woods Natural Area provide a tremendous benefit to the City and region in terms of open space preservation and passive recreation. In regard to the remaining

parcels in South Burlington, it is the City's desire that the properties continue to be used for educational, research and agricultural purposes. These lands are well suited to an educational emphasis due their proximity to the main campus of the University of Vermont. In addition, the provision of higher education services contributes a far-reaching benefit to the welfare of the community and region, including quality education for the citizenry, attraction and retention of business, and relatively high paying jobs.

Future Needs and Trends

City Offices. City Hall has received major upgrades including: a new HVAC system, mold removal, interior and exterior painting, carpets; the decades-old phone system was upgraded, new audio and visual equipment is available for use in public meeting rooms, and new security infrastructure is in place; a new stormwater treatment system brings the property into line with City-wide goals, and new landscaping and signage has freshened the building, making it easier to navigate and serving as a place of pride for employees and citizens of the community. An employee kitchen, break area, and fitness center are amenities that will help attract and retain quality employees. In 2013, a City Center Public Facilities analysis was performed that outlined needs related to a future building in the City Center area.

Emergency Management. Several population and development trends in South Burlington will shape emergency management in the coming years.

- **Population Growth and Development.** Housing development is expected to continue at a rate of average rate of 1.5 to 2.0 % annually. Commercial development is also anticipated to continue at a similar pace. This development will likely include a combination of infill using facility infrastructure and new development requiring infrastructure extensions. It is also anticipated that growth and development will vary by individual year. Population, meanwhile, is expected to grow incrementally through 2020, and then level off, according to a demographic forecast prepared in January 2015. As more people and businesses reside in and visit the community, emergency response needs will grow as well. . Any proposed development needs to consider the ability of city departments to serve that development. Elder housing may require additional Fire Department Staffing, while retail development may require additional police staffing. As development continues, the growth may trigger a need to expand one or more city departments.
- **Population Aging.** Gradual aging of the resident population - and development of additional senior housing facilities - will influence future emergency response needs, in particular fire and rescue needs.
- **City Center Development.** The built environment of City Center - compact streets coupled with multi-story mixed use development - will influence future emergency response needs, including potential foot or bicycle police patrol, confined space fire and rescue training, and other specialized needs. Consideration of regulated parking and parking enforcement will have to be factored in to project development. This built environment may also provide opportunities for community sheltering.

Primary and Secondary Schools. Neighborhood schools are "creators of community" and an essential component of the City's quality of life; they minimize the need for transportation for those students within walking distance. Sidewalks and signaled cross walks should be provided during the review process of new developments to allow students to walk safely to school. Similarly for those students outside walking distance sidewalks should be provided to school bus stops. These stops should be located away from residences or appropriately buffered so that waiting groups of students do not disturb residents. In general, city streets and sidewalks, especially along arterials and collectors, should be constructed to serve new residential developments and provide safe pickup stops for school busses that do not impede high volume of through traffic.

Non-Transportation Improvements

1. Proposed New Water Tower (Southeast Quadrant)

Summary	Acquire land and construct a water tower in the Southeast Quadrant.
Purpose	To ensure adequate water pressure and fire protection services to meet future needs from a location that is among the higher elevations in the City.

2. Expanded City Center Park (Market Street / Potash Brook)

Summary	Conserve an area of public open space as identified in the City Center / Market Street Environmental Assessment and approved Dumont / City Center Park concept Plan, focused on the natural features of Potash Brook.
Purpose	To create an interactive natural area in the City Center area that provides for stream buffer and groundwater infiltration together with public interaction, education, and enjoyment.

3. Proposed New City Park (Van Sicklen / Hinesburg Road)

Summary	Acquire land and develop a new municipal park with roadways and recreation paths linked into City-wide systems.
Purpose	To create a multi-purpose, citywide park for use by residents and visitors. Features of the park may include: ball fields, picnic areas and shelters, playgrounds, community gardens, support facilities, complementary agricultural operations, renewable energy production, etc.

4. Proposed New City Park (Lakeshore)

Summary	Acquire land and develop a new municipal park with recreation paths linked into city-wide systems, continuing the waterfront system and providing public access to Lake Champlain.

Purpose	To create a multi-purpose, citywide park for use by residents and visitors. Features of the park may include: ball fields, picnic areas and shelters, playgrounds, community gardens, support facilities, complementary agricultural operations, renewable energy production, etc.

5. Proposed New City Park (Muddy Brook)

Summary	Acquire land and develop a new municipal park with recreation paths linked into City-wide systems.
Purpose	To create a natural area and buffer to Muddy Brook for use by residents and visitors, complementing already conserved parcels and their walking trails. Features of the park may include: walking trails, wetland restoration, renewable energy production, etc.

6. Proposed New City Natural Area (Winooski River)

Summary	Acquire land and develop a new municipal park with recreation paths linked into City-wide systems.
Purpose	To create a natural area and buffer to the Winooski River for use by residents and visitors, complementing the nearby Winooski Valley Parks District land and their walking trails. Features of the park may include, but are not limited to: walking trails, wetland restoration, etc.

7. Proposed New City Park (Winooski River)

Summary	Acquire land and develop a new municipal park with recreation paths linked into City-wide systems.
Purpose	To create a community or neighborhood park for use by residents and visitors, providing access to neighboring residential areas. Features of the park may include, but are not limited to: recreation paths, ball fields, playgrounds, picnic areas, etc.

8. Proposed New City Park (City Center)

Summary	Acquire land and develop a programmable urban park as a focus point to City Center
Purpose	To create a central outdoor (with possible indoor features) gathering space that supports community events and acts as a key, public place in the heart of the City.

9. Proposed New Community Library (City Center)

Summary	Acquire space for an develop a new City Library in City Center
Purpose	To establish a City Library consistent with the needs identified in the City Center Public Facilities Feasibility Study, including core library functions as well as community event and activity space.

10. Proposed New Indoor Recreation Facilities

Summary	Acquire space for and develop indoor recreational facilities, likely in City Center.
Purpose	To establish needed indoor recreational facilities identified within this Plan and the City Center Public Facilities Feasibility Study. Discussions with the School District regarding centralized and/or decentralized locations for such facilities are ongoing.

11. Proposed New City Hall

Summary	Acquire land for and construct a new City Hall to replace the current facility.
Purpose	To meet future needs for space for core municipal functions as identified in the City Center Public Facilities Feasibility Study.

Additional Resources

- **School + Community Master Planning Task Force Report (2015)**
- **Feasibility Study, City Center Public Facilities (2013)**
- **South Burlington Open Space Report (2014)**

Community Facility & Services Objectives

Objective 10. Provide quality indoor and outdoor public facilities and services, identified through collaborative strategic planning, that meet present-day needs and are programmed to anticipate needs at least 20 or more years into the future.

Objective 11. Complete comprehensive and consistent master plans for significant City-owned parks and natural areas.

Objective 12. Provide connections and space for City residents of all ages and abilities to participate in life-long educational, recreational, and community service opportunities for both personal enrichment and to strengthen neighborhood and community connections.

Objective 13. Provide ease of access to City governance and raise rates of public participation in decision making.

Community Facility & Services Strategies

Strategy 25. Annually maintain a capital budget and program for future public facility and utility needs; link to Impact Fee Ordinance.

Strategy 26. Improve and expand public facilities and services in a manner that supports, complements and reinforces the land use and development recommendations of this plan, which includes a preference for infill over expansion of existing service areas.

Strategy 27. Continue to develop and refine City-wide plans that address "Ability to Serve" issues from a capital, human resource and programmatic perspective. Further ongoing planning efforts to ensure that adequate wastewater, water, stormwater, emergency services, public works and other pertinent City services are available in anticipation of growth.

Strategy 28. Encourage consideration of the construction of people-oriented public facilities - including a community library, city hall, indoor recreation facilities and community center; and open space environmental infrastructure in the City Center area.

Strategy 29. Provide ease of access to public information and feedback through tools such as CCTV, the City website, social media, and traditional media, and continue a policy of open governance.

Strategy 30. Encourage the provision of open space and dedicated park land that accentuates the school district's educational goals by providing for experiential and applied learning experiences.

Strategy 31. Regularly evaluate the City's policies regarding use of City infrastructure.

Strategy 32. Create and implement policies and incentives that will attract high quality and affordable childcare.

Strategy 33. Develop a public facilities impact fee to support the establishment of municipal facilities, including a community center, to meet the community's needs.

Strategy 34. Implement identified projects within the All Hazards Mitigation Plan including river corridor management.

E. Quality of Life

The South Burlington Comprehensive Plan is intended to provide a road map to the continued efforts of the community to provide the highest possible quality of life for its current and future residents and visitors. This is met through establishing policies that support the needs of an increasingly diverse population in their homes and search for housing, in their workplaces, in their schools, in their recreation, and in their community as a whole.

Overview

The focus of this plan is on the physical environment that the community shares: natural areas and rivers, parks, neighborhoods, commercial and employment centers, roadways and recreation paths. The physical space sets the groundwork for true quality of life measures: affordability of housing, availability of employment, mobility of transportation, conservation of natural resources, provision of community and emergency services, and opportunities for public interaction and gathering.

Each chapter of this Plan is designed and drafted to support this effort from the various perspectives and topic areas that influence or are influenced by the use of land and the provision of services by the City and schools. A handful of important contributing factors lead to a high quality of life in the City, however some are not specifically enumerated elsewhere in the Plan and therefore are discussed below. They include:

- Design of the built environment
- Public and community services
- Community engagement
- Clean air
- Livability

Design of the Built Environment

There are defined aesthetic qualities that affect the perception of South Burlington. The built environment, open spaces, scenic views, and natural areas help to define the City as well as its various neighborhoods and business districts. New design should respect the existing landscape and positively contribute to it. Open spaces and natural areas essential to scenic views and historic landscapes should be identified and preserved for future generations. This plan seeks to allow for responsible development that positively contributes to the community while preserving the essential elements of the City's landscape that define South Burlington for future generations to enjoy.

Among the strategies of this Plan to promote a quality built environment:

- **Design Review/Form Based Codes.** The City has successfully implemented several design review districts within its City Center and is in 2015 working towards an evolution to an adopted Form Based Code. This effort has proved

successful and it is a concept that is proposed to be explored in other areas of the city. It is in the interest of the City to improve its appearance in order to enhance the quality of life for the City's residents, businesses and visitors.

- **Public Infrastructure.** Improvements to the appearance and aesthetics of the City can be accomplished by such actions as placing utilities underground, planting trees and landscaping along City streets, and enforcing sign regulations.

- **Landscaping.** Several existing features in the Land Development Regulations should be maintained and applied in order to improve the aesthetic quality of the City. These may include landscaping requirements, setbacks, buffers around project perimeters, conservation of existing vegetation, berming in select areas, shielding large parking areas with landscaping or buildings, and buffers between conflicting land uses.

- **Lighting.** Continuing to require that lighting within the City be attractive and downcast is an important component of the community's aesthetics. The inclusion of incentives or requirements for energy efficiency, dark sky compliant standards, and pedestrian-scaled design should also be explored.

- **Stormwater.** Stormwater has become an increasingly important issue in urban design as stormwater facilities and low-impact development techniques are implemented throughout the City (See the Grey Infrastructure chapter). These have the opportunity to be attractive elements of the community if implemented as part of a thoughtful design.

- **Context-Sensitive Site Design.** The City should also encourage the retention of historic landscapes and structures and the restoration of others. The use of additional alternatives to achieve improved aesthetics should be explored, such as requiring variable setbacks, the use of high quality traditional building materials, and locating parking to the rear of commercial establishments. It has been a trend in many sectors of the retail area to construct cheap structural shells that are easily changed to accommodate market fluctuations. The City should work with the development community to identify tools to improve the quality and aesthetics of design while maintaining the flexibility.

- **Public Spaces.** It is important that public spaces continue to be fully integrated into the built environment. These public spaces, be they parks, recreational paths, sidewalks, public squares, outdoor seating at restaurants, and more, contribute substantially to the quality to life within the City and help to foster a true sense of community.

- **Public Art.** Public art should be encouraged in both public and private projects.

- **Open Space Management.** The City's public open space areas provide a significant amenity to the community in terms of their conservation of natural resources, their aesthetics, and their availability for public use. Over the past decade, the need to develop long range management plans for the City's open space has become clear. The City should continue to develop, maintain, and implement these plans.

Together, these strategies, combined with those from elsewhere in the plan, are intended to implement a smart growth strategy of efficient use of land and maintenance of high quality developed and undeveloped areas. In the past decade, the City has participated in the establishment of several such areas, including development of the Farrell Street neighborhood, adaptive re-use of buildings along Dorset Street, and conservation management planning for the Wheeler Nature Park.

Public and Community Services

Several chapters of the Comprehensive Plan provide objectives and strategies related to public infrastructure and facilities designed to serve the needs of the community: streets, recreation paths, water and wastewater facilities, parks, municipal and school buildings, community spaces, and libraries, among others.

Related to each of these facilities are the services and activities that take place on and within them, and the need to maintain them for ongoing use. The breadth and quality of these services plays an important role in the quality of life in the City. These services fall into a two broad categories:

- **Community Facility Maintenance.** The upkeep and planned upgrade of public and quasi-public facilities, such as snow plowing, and building repair are the responsibilities of the system owners and should be planned for on a regular and ongoing basis. Maintaining these facilities allows not only for the basic needs of the community to be met, but provides opportunities for public interaction and enjoyment. It also allows for private community groups to meet and host their activities.

- **Public Services.** Community services such as fire, police, recreational programming, education, and libraries are critical components of the quality of life of a community. These services provide for both immediate needs and for long-term tools for success and enjoyment by the public. The City has worked to enhance many of these services and facilities in the last decade, including the creation of a community room in the new police station, establishment of new public open spaces with the voter-approved Open Space fund, enhancement of recreation services, library and senior programs, community policing, stormwater, and overall services of the City, and creation of a new family of City logos that are designed to reflect the community and its residents.

Community Engagement & Promotion

Residents of the City have a long history of direct involvement in local organizations and municipal governance, as well as a tradition of knowing and helping out their neighbors. Healthy communities are ones in which residents play an active role. In South Burlington, the need for civic engagement is high; a successful community relies heavily on the opinion and work of volunteers.

Public involvement takes multiple forms. Each of these reflects a commitment to the community.

- **Voting and Participation in Local Decision Making.** Residents of South Burlington have long voted on the election of municipal and school board officials and the school budget. In 2008, an amendment to the municipal charter was enacted providing the voters with the responsibility to vote on the annual municipal budget as well. These four key votes – in addition to those for special ballot items – provide the backbone of the City and school's operations and require an important framework of public information sharing amongst elected officials, staff and the public. In between these key annual votes, volunteer boards and committees meet on a monthly or semi-monthly basis, hosting discussions and debates and making important decisions regarding the future of the community. Participation by the public in these regular meetings and events is an important element of maintaining a strong, connected community and making effective decisions for its future.

- At the core of public participation is the need for transparency in operations. The City's charter change to require voting on the budget is an example of this transparency, as is the posting of meeting agendas and studies on the City's website and overall open approach to public meetings.

- **Community Activity Participation.** South Burlington residents have – and make use of – substantial opportunities to participate in community events, both within the City itself and throughout the vibrant Chittenden County area. Local community-based activities and events, such as recreation programs, Green-Up Day, Fire Department activities, and library events provide opportunities for enrichment and interaction, and for community members to get to know one another; all critical components of a community with a high quality of life. A parallel opportunity for South Burlington is the existence of a tremendous variety of activities and programs in Burlington and throughout Chittenden County. Participation in these activities helps to enhance the overall sense of regional community. It is important that residents continue to be offered opportunities to engage locally – through community or neighborhood events– to increase community pride and to link all facets of the community. These opportunities should encourage a sense of place. Pocket parks, pop-up facilities, food trucks, and neighborhood improvement initiatives will help promote community identity and pride.

- **Volunteerism.** Volunteerism is a critical backbone of any successful community. In South Burlington, over 80 volunteers serve on more than a dozen different committees and boards just for the City. Volunteers associated with the South Burlington schools, community groups, and non-profit organizations within and outside the City extend this figure manyfold. In addition, many donors have contributed to the community over the years, enhancing facilities and services for all residents to enjoy. The City should continue to foster volunteerism and participation in local governance through open and transparent meeting practices, providing community meeting space, use of emergent technology, and outreach to interested individuals who have expertise in various subject areas and wish to serve the community.

Clean air

Clean air is precious resource. This Plan provides for a multi-faceted approach to prioritizing access to clean air; strategies can be found throughout the Plan that aim to create global, regional, and local impacts. This includes a reduction of fossil fuels through promotion and prioritization of renewable energy infrastructure, conservation of natural resources and a target towards an increased tree canopy, and a focus on transportation alternatives and non-motorized transportation alternatives. Regulations in effect limit visible emissions and pollutants while other adopted City Ordinances, including those related to outdoor burning, control of air pollution, and several fire-related ordinances, directly or indirectly seek to do the same.

The City commits to continuing focus in these areas, with appropriate relationships to the Land Development Regulations and other ordinances.

Livability

The City is strongly committed to providing an enjoyable environment for residents, employees, and visitors at their homes, places of employment, schools, and destinations; where children can freely play, residents can sit on their front stoops free of excessive nuisance, where neighbors become friends, and where staying in the community is a purposed and gratifying choice.

The City, through this Plan and other tools and policies, sets high expectations. While recognizing that mixed uses can create great places, they may also lead to conflict. The City will support access to enjoyable living and work for everyone. Impacts of human activity will be mitigated or reduced to ensure the highest quality of life possible.

All human activity, be it household, recreational, travel, business operation, or provision of services, generates noise and other impacts on the community. This is especially the case along the City's major transportation corridors, in the central district, and where people and business are located close together. Recognizing that having a dynamic, bustling community brings with it these side-effects, the City will remain cognizant in planning land uses and activities, investigate innovative land use planning techniques, promote site design that recognizes and mitigates for these impacts, and continue to support regulations such as the public nuisance ordinance and noise generation standards within the Land Development Regulations. The City will also continue to engage the community to understand residents' and employees' needs for high quality environments.

The City also maintains regulations and ordinances including those related to fire hazards, vibration, noise, odors, heat, glare, and waste materials. The City remains committed to enhancing the quality in life for its residents, employees, and visitors in part through enforcement of these standards.

Quality of Life Objectives

Objective 14. Seek a livable balance between public, commercial, and civic activity and private tranquility and promote the health, peace, and well-being of residents in their daily lives.

Objective 15. For all new development, public and private, consider accessibility for users of differing ages and physical abilities.

Objective 16. Build and reinforce diverse, accessible neighborhoods that offer a good quality of life by designing and locating new and renovated development in a context-sensitive manner.

Quality of life Strategies

Strategy 35. Take into account the quality of life of residents, employees, and visitors in the development of City policies, plans, projects, and regulations.

Strategy 36. Actively plan for public spaces throughout the City, including public open spaces and public art, such that these spaces can be utilized daily and also for special community-oriented events.

2.3. Gray Infrastructure

A. Transportation

The conveyance of people, goods, and services is a key element of South Burlington's residential and commercial health. Transportation systems should be designed to provide residents and visitors access to diverse alternatives for getting to their desired destinations. In addition, transportation systems should provide for the orderly and continued economic growth of our community. The improvements and expansion of transportation systems should also proceed in a way that complements the pattern of existing and proposed land uses. Planning of such systems should be geared to the limited supply of land and some fuel sources.

Overview

Key issues and needs related to transportation in the City include:

- South Burlington is shifting from an automobile-dependent, suburban development pattern to a multi-modal, urbanizing development pattern. This transition requires changes to the City's transportation system to emphasize bicycle/pedestrian travel, transit and greater connectivity in support of the land use goals of this plan.
- Short commutes, pleasant residential neighborhoods and contiguous open areas are key elements of South Burlington's quality of life. To maintain both, the City will need to avoid traffic congestion (through development of a more efficient, interconnected local street network and through major highway projects such as the Route 2 corridor improvements and Exit 12B) while mitigating the impacts of through traffic on residential streets.

Inventory

Travel Corridors and Roadway Network. There are approximately 100 miles of roadway in the City of South Burlington. Each of these roadways serves multiple users, from automobiles, busses, and commercial trucks to pedestrians and cyclists. Within each roadway corridor, the City (or state for certain roads) must determine the most effective combination of infrastructure within the limited right-of-way. The City's existing transportation network is shown on the *Road Class and Transit Routes* map. An inventory of conditions within key corridors is below:

- **Interstates 89 and 189.** These routes serve as the primary long distance travel corridors in the region, connecting Chittenden County to areas to the north and southeast. They also serve an intra-regional function connecting with the local transportation network.

  Travel Infrastructure. Four lanes of divided vehicle travel, with full interchanges at Williston Road (Exit to I-89), Shelburne Road (to I-189), and

an interchange that provides access between the two interstates and between Kennedy Drive and Shelburne Road (Exits 13 to I-89 and I-189).

Missing Links and Needed Improvements. Needed improvements focus on accesses to the interstate itself, including needed ramp improvements at Exit 14 and the potential for new or improved interchange accesses within the City.

- **Shelburne Road (US Route 7).** This route serves as the primary north-south access for the western corridor of Vermont as well as the principal collector for residential neighborhoods and employment centers in the southwestern portion of South Burlington. It also provides direct access to I-189. Major improvements to the Shelburne and South Burlington (to Imperial Drive) segments of this route were completed in 2006.

  Travel Infrastructure. Four lanes of vehicle travel with medians for local and regional automobile travelers, commercial vehicles, transit service, on-road bicycle lanes and sidewalks.

  Missing Links and Needed Improvements. The section of Shelburne Road north of IDX Drive does not contain medians or on-road bicycle lanes, limiting the efficiency of vehicle travel and forcing bicycles onto relatively narrow sidewalks. Safety for pedestrians and cyclists crossing this section of Shelburne Road is also a concern.

- **Williston Road (US Route 2).** This route provides local and regional east-west access through Chittenden County. Prior to the construction of I-89, it was the primary east-west corridor in the region. Now its role has been redefined as serving primarily local travel needs for people who live and work in the vicinity of the corridor. The updated 2012 Route 2 Corridor Study provides an extensive description of existing conditions on the highway, and short- and long-term solutions to congestion, access, and safety problems. In June 2010, the Chittenden County Transit Agency initiated a revised, direct corridor service along this route that includes 15-minute bus headways in each direction at peak commuter hours.

  Travel Infrastructure. Four lanes (reduced to two lanes east of Route 116) vehicle travel for primarily local automobile travelers, commercial vehicles, and transit service; 5' wide on-road bike paths and sidewalks (intermittent east of Air Guard Road). The City completed a widening of US2 nearest the Sheraton Hotel in order to accommodate increased traffic volumes, reduce congestion, improve safety, and address lane assignment confusion for interstate access.

  Missing Links and Needed Improvements. The Route 2 Corridor Study highlights several key needed improvements, including access management, pedestrian safety, the need for bicycle infrastructure throughout the corridor and crossing the Interstate, and the lack of park and ride facilities. The 2012 TIF Plan identified the need for and including funding for streetscape improvements along this route.

- **Hinesburg Road (VT Route 116).** Hinesburg Road provides primary access between South Burlington and communities to the southeast. Its northern extremity also lies at the core of a long-establish residential neighborhood, connecting residents to Williston Road and Kennedy Drive.

  Travel Infrastructure. Two lanes of vehicle travel for primarily local automobile travelers and commuters from the southern Chittenden County, limited transit service north of I-89; sidewalks on one side of the street north of Hayes Avenue, wide shoulders for bicycles south of Tilley Drive.

  Missing Links and Needed Improvements. The northern extremity of Hinesburg Road will need some upgrades in terms of signalization and access management associated with City Center. Sidewalks are missing south of Hayes Avenue towards Tilley Drive, but funding is allocated and plan development underway. Any future interstate interchange (Exit 12B) will also require upgrades.

- **Patchen Road.** Patchen Road serves as the extension to Hinesburg Road north of Williston Road, connecting South Burlington with Riverside Avenue and Colchester Avenue at the Burlington–Winooski border. The bridge over I-89 is one of only a handful of connectors between the communities. The character of development adjacent to Patchen Road is primarily medium density residential, but the route is used by a handful of commercial and industrial establishments located in Burlington or South Burlington.

  Travel Infrastructure. Two lanes of vehicle travel for primarily local automobile travelers, and some heavy trucks, sidewalks on one side of the street at its southern end; wider lanes that allowed for shared use in some areas.

  Missing Links and Needed Improvements. Sidewalks exist at the southern end of Patchen Road, but do not continue northwards. In addition, sidewalk connections to Burlington are limited. Space exists for bicycle lanes in some areas, but have not traditionally been striped for such use. Recently approved development of a housing development on the Burlington side will complete these missing connections. Traffic caused by heavy trucks remains a challenge in the residential areas but should be reduced significantly when S.D. Ireland relocates from their property which is to be the site of the new housing development.

- **Spear Street.** This route parallels Shelburne Road, serving primarily residential transportation needs. The 2004 Spear Street Corridor Study includes a full analysis of the roadway's existing conditions, and recommended strategies for maintaining its functionality and level of service as development proceeds.

  Travel Infrastructure. Two lanes of vehicle travel for primarily local automobile travelers and commuters from communities to the south. Repaving in 2013 made shoulders wider and adequate for bicycles on both sides south of Swift Street, separated recreation path north of I-89.

  Missing Links and Needed Improvements. Recommended improvements for this street are found in the 2004 Spear Street Corridor Study, including intersection improvements at the Swift Street intersection and improved bicycle lanes.

- **Dorset Street.** Dorset Street serves commercial and higher-density residential land use at its northern extent and becomes a north-south collector serving primarily residential transportation needs further south. The 2007 Dorset Street Corridor Study describes existing conditions and recommends strategies for improvements to ensure the corridor's ability to maintain and expand high levels of service and safety for all users.

  Travel Infrastructure. North of Kennedy Drive, Dorset Street is a four-lane road with a median, transit service, and sidewalks/bicycle path on both sides. South of Kennedy Drive, Dorset Street is a two-lane road with intermittent recreation path sections parallel to the roadway.

  Missing Links and Needed Improvements. Recommended improvements for this street are found in the 2007 Dorset Street Corridor Study, including intersection improvements at the Swift Street intersection and improved bicycle paths and sidewalks south of Old Cross Road. The City is working with the CCRPC towards adaptive traffic signal control on the northern stretch of Dorset Street.

- **Kennedy Drive.** Kennedy Drive connects I-189 to Williston Road and serves as an important local arterial connection and primary access to the Burlington International Airport.

  Travel Infrastructure. Kennedy Drive was fully reconstructed in 2007 as a landscaped four-lane boulevard, with a planted median island, on-road bicycle lanes, recreation path, and sidewalks. Regular transit service is also provided on this road.

  Missing Links and Needed Improvements. No needed improvements have been identified for this roadway at the present time.

- **Airport Parkway / White Street / Airport Drive.** These three roads, together, serve as the primary link between South Burlington and Essex / Colchester, provide access to one of only a handful of crossings over the Winooski River, and to the Burlington International Airport.

  Travel Infrastructure. Airport Parkway consists of a two-lane roadway with limited sidewalks at its southern extremity. White Street and Airport Drive are two-lane roadways with sidewalks on one side.

  Missing Links and Needed Improvements. Access in the vicinity of the confluence of these roads is problematic as commuter, business, and airport-bound traffic converge on primarily residential streets. No bicycle lanes or sidewalks have been established north of Kirby Road along Airport Parkway, while White Street is underserved by sidewalks, with none on the side of the street occupied by the Chamberlin Elementary School. Transit service is present along White Street and Airport Drive, but does not extend along Airport Parkway. The potential for an Airport Parkway realignment could lead to better access to BIA and would remove some traffic from neighborhood streets.

- **Kimball Avenue.** Kimball Avenue runs parallel to Williston Road between Kennedy Drive and the Williston town line. The roadway serves as a collector

for local businesses, a short-cut for traffic reaching retail destinations in both communities, and as a bicycle commuter route.

Travel Infrastructure. Kimball Avenue consists of a two-lane roadway with narrow bicycle lanes on both sides and a partially-established recreation path on the southern side. Limited bus service is also provided on Kimball Avenue as part of the South Burlington Connector route.

Missing Links and Needed Improvements. While vehicular access to and from Kimball Ave is generally strong, a connection to Tilley Drive is planned for some point in the future. The bicycle infrastructure on the roadway remains somewhat limited and in need of completion (both in term of on-road striping and recreation paths). The City is working with the CCRPC to complete path connection to the Williston town line. The City initiated a network analysis for Tilley Drive/Kimball Avenue in 2015 in order to examine multimodal plans and intersection enhancements based on anticipated development in the area.

- **Secondary Roads.** A substantial network of collector and neighborhood roads link into the primary travel routes in South Burlington described above. These vary in width, size and amenities, but generally consist of two travel lanes, sidewalks (on collector roads and newer roads), and on-street parking.

Traffic Volumes. The state highways and several local roads in South Burlington are heavily traveled. Nearly 40,000 vehicle trips are made each day on Williston Road (US Route 2) nearest the Exit 14 interchange, with 30,000 trips per day on Shelburne Road (US Route 7). Hinesburg Road carries around 11,000 vehicle trips daily. Other main travel routes include Dorset Street, Kennedy Drive, Kimball Avenue, Old Farm Road and Shunpike Road. Some of the roads that have experienced the greatest increase in traffic volume in recent years include: Kimball Avenue, Old Farm Road, Shunpike Road, Dorset Street and Spear Street. Up-to-date traffic data is maintained by the Chittenden County Regional Planning Commission.

Road Standards and Regulations. South Burlington has adopted road standards and uses its land use regulations and Official Map to maintain and improve traffic safety and efficiency. The regulations require new development to maintain a certain level of service and the City seeks to avoid exceeding D levels of service or less at peak roadway hours at signalized intersections. As certain parts of the City begin to urbanize more (including City Center), however, levels of service lower than D may prove both acceptable and desirable in fostering a pedestrian-rich environment. The City's regulations can also be used to address and mitigate for high traffic generating uses in certain locations.

Recreation Path and Sidewalk System. The City's sidewalk and recreation path network is important component of the transportation network envisioned to provide safe non-motorized interconnections both within South Burlington and between the City and adjoining municipalities. South Burlington ordinances allow bicycle riding on sidewalks and recreation paths alike.

The network includes a combination of segments existing alongside roadways and segments that are more circuitous, following natural features or parks. Currently there are more than 70 miles of sidewalk and more than 26 miles of paved recreation path in the City. Most new residential and commercial streets have sidewalks on at least one side and all new developments are required to provide sidewalks or their equivalent. However, sections of major roads, such as Spear Street, Williston Road, Allen Road, Airport Parkway, Kimball Avenue, and Swift Street lack sidewalks, and frequently where there is sidewalk, it ends abruptly.

The existing recreation path system has its origins in a grass-roots citizen effort to provide for safe travel routes away from automobiles. After extensive public involvement, the group prepared and presented a recreation path proposal to the City Council in 1989. The council enthusiastically endorsed the project and designated an official City committee to oversee the path system. Initial construction of the path system was completed in 1992 and additional segments have been added since, funded through a combination of City funds and grants.

Pedestrian Trails. Currently there are 10.3 miles of formally recognized pedestrian trails in the City. There are numerous other short sections of trail created informally in various neighborhoods. Pedestrian trails are intended to remain in an unpaved, natural state, while recreation paths are intended to be paved for more intensive uses such as bicycling and in-line skating. The two networks should be complementary and interconnected.

Planning for a public pedestrian trail network began in 1969 and culminated in specific proposals in the 1974 Comprehensive Plan. Those proposals have been largely implemented through site plan and subdivision review. Also, requests for critical trail links have been made directly to landowners irrespective of any development plans.

Bicycle and Pedestrian Committee. The Bicycle and Pedestrian Committee (formerly the Recreation Path Committee) seeks and provides guidance on path development from City Council, the Planning Commission, the Development Review Board, other City committees, and the general public. The committee holds regular monthly meetings, which are open to the public. The committee also coordinates its planning efforts both with surrounding communities and with regional, state, and national path-related programs. The committee promotes use of the recreation path system and reminds the public about safety rules via occasional articles in T*he Other Paper.* The committee also recommends pavement marking and signage both on the path and on the roads to improve safety for pedestrians and cyclists.

Path or Trail Easements. Easements obtained over private land are the primary means of locating paths and trails in the City. Easements are usually obtained during the process of development review. Typically the Bicycle and Pedestrian Committee makes recommendations on desirable easements and path/trail alignments to the Development Review Board. The DRB and planning staff then negotiate with the landowner.

Transit Services. The Chittenden County Transportation Authority (CCTA) was formed in 1973 to serve the mass transit needs of it member municipalities. CCTA has grown to provide transit service throughout much of the region through a network of approximately 20 bus routes, as well as commuter links to Montpelier, Middlebury and St. Albans. Ridership has grown steadily since the system's inception and has ranged from three to eight % annual increases in recent years.

CCTA is funded through annual dues from its member municipalities, state and federal programs, and fares. CCTA passengers may pay per trip or purchase passes at a reduced rate. Discounts are available for senior citizens and students, and some employers and colleges offer free or reduced rate passes to their employees or students.

Three fixed routes serve the City of South Burlington: Shelburne Road, Williston Road, and the South Burlington Collector. The Williston Road route has among the highest weekday ridership of any route in the CCTA system and was recently redesigned to provide direct access between Williston and Burlington along Route 2, with only the University Mall as a detour. This was coupled with providing service every 15 minutes at rush hour. Both of these changes were implemented following an extensive planning process for the Route 2 Corridor that includes recommendations for improved transit service. This service is complemented by commuter link services in the direction of Montpelier, Hinesburg, Middlebury, and St. Albans. An on-demand service also operates from the University Mall to serve patients of the medical office buildings on Tilley Drive.

CCTA has placed a significant focus on ridership connections: outfitting all buses with bicycle carriers, providing additional shelters for riders, and coordinating with local, regional, and state partners on park-and-ride facilities and transit-friendly site design for new development.

Air Transportation. Burlington International Airport, a joint civil-military public airport, is managed by the City of Burlington and the Federal government. The airport, which sits on nearly 950 acres, dominates land use in the northeastern quadrant of South Burlington. The Airport Master Plan, documents the facility's existing status as well as future proposals through the next 20 years.

During the 2000s, the airport experienced an increase in growth and service. Between 2000 and 2008, $24 million in renovations and expansion were invested at Burlington International. The airport authority recently completed a $15 million expansion project that added five gates, customer service areas, a 948-space parking garage and an elevated connected walkway. A new garage expansion to add two additional floors was opened in 2011.

In recent years, the airport has averaged approximately 250 aircraft operations per day (50% general aviation, 30% air taxi, 5% military and 15% commercial). There are around 100 aircraft based at the airport including nearly 30 military aircraft. In recent years, the airport has enplaned approximately 750,000 passengers annually. Passenger flights to New York City, Washington D.C., Chicago and other regional hubs are available from the various airlines that fly out of Burlington International

Airport. Both major commercial parcel carriers (UPS Airlines and FedEx Express) fly into Burlington International Airport, providing service for much of northern Vermont. Two military installations are based at the airport: Burlington Air National Guard Base 158th Fighter Wing and the Army Aviation Support Facility (AASF) of the Vermont Army National Guard.

Rail Transportation. The Vermont Railway and the Central Vermont Railway both maintain tracks through South Burlington. These routes are presently used on a limited basis for freight service and summer tourist trains. Commuter rail service between Burlington and Charlotte was offered on the Vermont Railway along Route 7 from late-2000 to early-2003. Long-range plans at the state level call for passenger service to be re-established southward towards Middlebury, Rutland, Albany and New York City.

Analysis and Challenges

Interconnected Road Network. South Burlington's road network has a significant lack of east-west connections, as well as neighborhood and commercial district connections in general. This lack of connections overburdens the few intersections able to provide connectivity and results in unnecessary congestion. Alternate travel routes have been planned to relieve some of the pressure on the existing arterial network. The City has adopted an Official Map that includes several additional east-west connections and other improvements. These improvements are also shown on the enclosed map, *Planned Infrastructure Improvements*.

The planned roads will provide alternate routes of travel and result in a more grid-like network of streets. A grid network provides more alternate routes of travel without unduly impacting any single street with traffic cutting through the neighborhood as a shortcut. From the 1970s through the 1990s, many of the residential developments in the City constructed cul-de-sac and dead-end streets, which exacerbate traffic issues on the few streets that do provide access to neighborhoods, create costly and time-consuming inefficiencies in road maintenance, and can potentially jeopardize emergency response. Motor vehicle accidents, construction, or even water main breaks can and have closed off all access to neighborhoods with only one point of access. The focus of new streets is for connections, not high speed or high volume cut-throughs. New developments must connect to adjoining developments and their roadway systems.

The wider distribution of traffic into a more efficient network will result in increased traffic for some of the roadways in the vicinity of the planned roads. The CCRPC, through use of their regional traffic modeling software, is able to project impacts of changes to road network. Past studies have indicated that growth in adjacent municipalities can have an impact on the City's system. The need for efficient transportation facilities to serve the demand will continue. The City supports roadway designs that are sensitive to neighborhoods and that can discourage cut-through traffic while still providing access and mobility.

While the importance of these roadway connections cannot be overstated, any new connection should be undertaken with great care. Roadway connections should serve the purposes highlighted herein, but must also be sensitive to their surroundings. Connections should be designed with minimal speeds. Connections should also be ecologically sensitive, with careful planning to minimize impervious surfaces, respect rare or endangered plant species, and continue allowance for wildlife crossings. In some cases, reduced roadway widths or additional infrastructure may be appropriate.

Multiple Users. Like most of the county's early road systems, much of the South Burlington road network was long designed for a single purpose: to serve automobile traffic. The network has been undergoing a long-term retrofit to include and emphasize other primary users, including bicyclists, pedestrians, transit service, and truck traffic. In many cases, this has taken place within existing rights-of-way, but in some cases road widening has been necessary. Several key roadways – notably portions of Williston Road and some of the collectors that serve it – continue to provide only marginal transportation alternatives, which over time has led to increased vehicular traffic. With increased demand for bicycle, transit and pedestrian amenities to be a part of the standard roadway network, the City will need to evaluate alternatives for the use of existing rights-of-way.

Recreation Paths. With increased use of the path system (including sidewalks, recreation paths, trails, etc.), the need for the City to examine all users and all forms of infrastructure has grown over the past two decades. This need will continue into the future.

Access Management. Access management describes a set of strategies that can be applied to prevent congestion and improve safety as development occurs along road corridors. Access management can greatly improve the safety and efficiency of arterial streets by reducing the conflict between through, local and turning traffic. South Burlington has incorporated access management strategies into its land use regulations and is actively working with landowners to implement access management strategies along heavily traveled roads.

Accommodation of "through" traffic serving the greater needs of South Burlington residents, employers, and businesses on arterial streets carries a higher priority than access to frontage properties. The general pattern of existing and approved developments on Kennedy Drive and Kimball Avenue epitomizes a reasonable configuration of an arterial highway (i.e., few curb cuts and provision of service roads). Along Route 2 and most of Route 7, where highly fragmented ownership patterns have evolved over many decades there are extreme conflicts between "to" and "through" traffic. Consequently, even greater congestion in these areas can be reasonably anticipated for the foreseeable future.

There are several techniques and improvements that could be implemented, and at least should be explored, in order to improve upon existing problems, provide for anticipated future growth, and maintain the safety and an adequate level of service on arterial streets. Certain geometric improvements can be made to improve safety

and maximize capacity. Examples include installation of proper signing, striping, and control equipment; or provision of stacking lanes at mid-block and intersection locations to segregate "to" and "through" lanes. (This may require purchase or exaction of land for road widening of substandard rights-of-way). Parallel access roads, such as San Remo Drive, provide helpful means of access to development off of a main transportation corridor.

Transit. The recent enhancements to the Williston Road route were reflective of a demand that had exceeded supply in terms of service in the area. As development density increases in this area – particularly with the establishment of City Center – these needs will again increase. A significant challenge to transit providers in recent years has been the location of new development in areas not presently served. The medical facilities in the vicinity of Tilley Drive and Hinesburg Road are examples, as are some senior living facilities throughout the City. CCTA and the City will need to both plan for meeting these needs, as well as provide specific strategies to ensure effective and efficient land use along existing transit corridors.

Airport. The airport is a vital element in economic development and transportation for the county and surrounding region. The continued success of the airport will be characterized by increased aircraft operations, runway and terminal improvements, and increased ancillary activity at the southern end of the airport. In the areas of economic development and transportation, the interests of the City and the airport are very closely aligned. Improved roads and transit service in the City generally enhance use of the airport, and the attraction of further light industry to the City will be influenced by proximity to an airfield with the broadest possible range of air service.

There are some areas of conflict that the City and the airport have been striving to improve. Principally, these are the pre-existing residential neighborhoods in the immediate environs of the airport, including the impact of air noise and consumer travel to and from the airport.

The airport completed a 2030 Master Plan. The most recent information available projects that airport enplanements will double in the coming 20 years, as they did in the past 20 years. The plan includes multiple proposals for traffic mitigation, including a new access to the interstate. The City has not yet taken a position on the plan or its individual elements.

Future Needs and Trends

Pedestrian and Bicycle Circulation. Walking and bicycling are transportation modes that until the 1990s were largely overlooked in the region's spending and planning priorities. Bicycling, walking and jogging are increasingly popular for both recreation and transportation. Greater incentives to promote non-vehicular travel can and should be implemented to minimize dependence on the automobile for local circulation. In addition, pedestrians and cyclists in an automobile-oriented environment must receive appropriate consideration.

Pedestrian links are needed between neighborhoods, schools, parks, shopping and employment centers, other transportation modes and other community focal points. In order to promote such links as transportation facilities, pedestrian ways generally should follow direct travel routes whenever possible, rather than paralleling roadways. In addition, pedestrian/bicycle ways should be designed to reduce conflicts with motorized vehicles. Sidewalks and pedestrian ways that parallel roadways should be constructed on both sides of arterial streets, on one or both sides of collector streets, and on at least one side of local streets. In addition, it is important that all signalized intersections include a pedestrian phase in order to allow for pedestrian movements.

It is imperative to carefully plan for and implement safe provisions for pedestrians and cyclists when constructing, modifying and/or upgrading roadways: this represents a complete streets approach. Along arterial streets, separate or shared facilities for bicycle/pedestrian use should be provided. This need is particularly strong along the Williston Road corridor. On collector streets, bike/pedestrian routes should be designated by signs in conjunction with pavement widening and painted lines. On local streets where traffic volumes and speeds are low enough to pose few hazards to pedestrians and cyclists, bike/pedestrian route designations by signing alone should suffice. In addition, the University of Vermont, as a major focal point, must be closely involved with pedestrian and bicycle planning, particularly along Spear Street where its major holdings are located.

Pedestrian travel can also be promoted through land use policies. Mixed-use developments consisting of residential and non-residential uses, or office, restaurant and retail, enhance pedestrian movement by congregating services and facilities within walking distance. In addition, compact, mixed-use city or village centers create a more pedestrian friendly environment as opposed to linear strip development patterns along arterial roadways.

Traffic Data. The traffic data essential to equitable review of new development, such as volume counts, turning movements and volume-to-capacity ratios, should be collected and maintained. These factors affect the cost efficiency and proper timing of new roads or improvements, as well as the maintenance of reasonable levels of service.

Meeting Demands of Change and Development. As the City continues to evolve, the transportation network will need to evolve with it. Areas of additional development, such as in the vicinity of Kimball Avenue, Tilley Drive, Technology Park and Meadowland Drive, will face transportation challenges. Alternatives to meet those needs, including improvements to Interstate access (such as an Exit 12B), additional connectivity between existing and new roadways, increased transit services, improved bicycle and pedestrian facilities, and/or enhancements to existing street profiles will need to be examined and implemented. Such improvements must be planned and made in close coordination with nearby and affected land use areas and be in keeping with the overall multi-modal transportation goal and objectives of this Plan.

Road Design and Construction Standards. The design and construction of local streets should be reviewed in general accord with their classification and the following principles:

- Privately owned and maintained residential roadways are strongly discouraged;
- The speed and volume of "through" traffic is minimized;
- More than one access point onto collector or arterial streets is needed for larger or higher density projects (may include limited, emergency access points);
- The subdivision of lots without public road frontage is strongly discouraged;
- Adequate access for emergency vehicles is essential, and turnarounds for maintenance vehicles and school buses should be provided;
- Design and construction standards must be commensurate with density; and,
- Effective access management along collector and arterial roadways is essential.

As properties adjacent to streets with inadequate rights-of-way are developed or redeveloped, the land or easements necessary for widening or otherwise improving the right-of-way should be secured as a condition of site plan or subdivision approval.

Transit. Transit is best rendered to well-planned, intensively used compact areas. Higher intensity development should be directed towards existing bus routes or to areas where bus service can conveniently expand. In addition, specific development proposals should be carefully evaluated at site plan or subdivision review with regard to the need for patron shelters and other factors affecting bus stop location. Highway planning should specifically incorporate provisions for existing and potential transit service.

Rail. The Vermont Railway, which parallels Route 7, holds the potential not only for north-south intercity freight and passenger service, but also for direct service to the commercially zoned properties fronting on its east side. Rail siding potential for these properties should be maintained wherever feasible in the layout of proposed development. As the intensity of development increases on the lands west of the tracks, improvements to at-grade crossings (Bartlett Bay Road, Holmes Road, Inn Road) may be necessary.

Additional Resources

- **Market Street Reconstruction Project (current)**
- **Garden Street Project Definition Report (2015)**
- **Williston Road Transportation Network Study (2015)**
- **Williston Road Complete Streets Study (2012)**
- **US Route 2 Corridor Transportation Management Plan (2008)**
- **I-89 Exit 12B Circulation Study & Analysis Reports (2010, 2011)**
- **Shelburne Road Corridor Study (2012)**
- **Dorset Street Corridor Study (2007)**

- **Spear Street Corridor Study (2004)**

Transportation Objectives

Objective 17. Provide a transportation network that complies with Complete Street mandates and maximizes efficiency and safety for all types of users (pedestrians, cyclists, transit, automobiles, trucks, rail, and air).

Objective 18. Connect neighborhoods with one another via road segments and with commercial areas for local, slow speed circulation.

Objective 19. Provide a transportation network that is supportive of and integrated into the adjacent land uses and that is designed to minimize fragmentation of and adverse impacts to identified natural, cultural, scenic and other open space resources.

Objective 20. Reduce the percentage of trips taken by single-occupancy vehicles in the City.

Objective 21. Seek alternative traffic congestion relief measures before existing roadway segments are expanded.

Objective 22. Foster community discussion about transportation and land-use planning for the northeast quadrant of the City, including Interstate connectivity.

Transportation Strategies

Strategy 37. Due to increased development and the desire to protect natural resources, update the *South Burlington Planned East-West Roads Analysis*.

Strategy 38. Plan for safe pedestrian and bike access to all schools and support efforts to encourage more children to walk or bike to school.

Strategy 39. Work with the private sector to implement transportation demand management techniques such as ride sharing programs, bus vouchers, and flexible work hours; such techniques should be explored as possible mitigation to potential negative traffic impacts resulting from new development.

Strategy 40. Implement the proposed street and intersection improvements included on the City's Official Map and/or Capital Budget and Program either as a public project or by private developers as warranted by the scope of new development, and continue to require developers to make any necessary improvements to intersection geometry, signalization, and streetscapes as a condition of approval.

Strategy 41. Implement access management techniques when planning new roads or improving existing roads. Require the provision of access management techniques (e.g. limit curb cuts, service roads, etc.) along high volume arterial and collector roadways as a condition of approval for new development and redevelopment.

Strategy 42. Work with the Chittenden County Regional Planning Commission and Vermont Agency of Transportation to establish Transportation Improvement Districts (TIDs) in areas anticipated for development and transportation need.

Strategy 43. Work with the Chittenden County Regional Planning Commission to complete transportation network analyses and network studies for areas anticipated for development and transportation need, including examination of an I-89 Interstate interchange at Hinesburg Road or other location.

Strategy 44. Work with neighboring communities and transportation partners on cooperative strategies for managing the impacts of travel to and from South Burlington, including park and rides and capture/intercept lots, along with appropriate and direct public transit serving them, and pedestrian and bicycle infrastructure connecting to adjacent municipalities.

Strategy 45. Develop and build a City-wide sidewalk and recreation path plan that identifies and prioritizes gaps to link various neighborhood and community focal points.

Strategy 46. Support enhanced commuter rail service on the Vermont Railway and Central Vermont Railway tracks and amend the City's Land Development Regulations to provide opportunities and mitigate against impacts of rail connections in the community.

Strategy 47. Prioritize transportation planning efforts to provide safe and efficient access to the Burlington International Airport in a manner that does not adversely affect adjacent neighborhoods.

Strategy 48. Improve traffic flow through the City by exploring new technologies, synchronizing traffic lights and adjusting traffic light timing based on time of day and traffic volume while retaining balance with pedestrian needs.

Strategy 49. Seek opportunities to install a park and ride lot along the Shelburne Road corridor.

Summary of Proposed Transportation Improvements (Map 10)

1. Williston Road / Hinesburg Road Intersection Improvements

Summary	This intersection would be improved to provide greater traffic movement in various directions related to future City Center traffic flows.
Purpose	This is proposed in order to ensure safe and efficient traffic movement on Market Street and throughout City Center.
Potential Impacts	The Hinesburg Road intersection presently functions as one of few signaled pedestrian crossings of Williston Road. Any improvements to this intersection will need to be balanced with pedestrian needs and scale.
Completed Studies	Market Street Improvements Environmental Assessment (2010), Garden Street Project Definition Report (2015)

2. City Center Road Network

Summary	This project includes a reconstruction of Market Street, Garden Street, and additional connected streets within the City Center area with on-street parking, sidewalks, landscaping, and utilities. Bicycles are envisioned to share the street as it approaches the core of City Center. Market Street would be crossed by new roads: one connecting Midas Drive to Healthy Living, a second (later phase) to connect San Remo Drive to a realigned Mary Street, and one or more others linking the street to the Marcotte Central School Property to the north and properties to the south.
Purpose	To provide safe and efficient access from Hinesburg Road to Dorset Street, and to create a downtown-style network of roadways in conjunction with City Center

Potential Impacts	Market Street is already in existence. The impacts of the road network are fully assessed in the Market Street Environmental Assessment.
Completed Efforts	Market Street Improvements Environmental Assessment (2010); Market Street Reconstruction (2015 and nearing completion); Garden Street Project Definition (2015)

3. City Center Parking Garage

Summary	One or more parking garages to serve the City Center area, as envisioned in the Conceptual Master Plan.
Purpose	In order to foster a downtown-style of development, it will be necessary for parking to be provided in a format other than traditional surface parking. The City has 450 spaces approved as eligible for TIF District Financing.
Potential Impacts	Cost and use of land for parking are two important considerations. Public parking that is highly accessible may be constructed in private buildings. Some options and alternatives exist to mitigate some of the need for on-site structured parking, including potential participation in a Transportation Management Association and/or nearby off-site option.
Completed Studies	Market Street Improvements Environmental Assessment (2010)

4. I-89 Bicycle-Pedestrian Bridge

Summary	Analysis and potential construction of a bicycle and pedestrian bridge over I-89 in the vicinity of Exit 14.
Purpose	To provide safe and efficient connectivity for walkers and cyclists between the City Center area and housing, University of Vermont, and City of Burlington on the west side of the Interstate.
Potential Impacts	Present bicycle and pedestrian infrastructure over the Interstate has limited functionality. While sidewalks and bicycle lanes do exist, they are crossed by multiple on- and off-ramps on both sides.
Completed Studies	Not yet studied in depth.

5. Airport Drive Extension

Summary	A new connector road to link Airport Drive directly to Airport Parkway. This proposal has been included in several Comprehensive Plans of the City.
Purpose	To provide a more direct connection for travelers between Route 15 and Williston Road / the Burlington International Airport. At present, all traffic must use White Street, a predominantly residential street.
Potential Impacts	This new road would relieve traffic from White Street and other local streets. Care will need to be taken to ensure traffic does not increase on Kirby Road.

Additional Info	The design of this new roadway is under review as the Burlington International Airport undertakes its noise mitigation and reuse plan. Final designs of the roadway will need to consider both impacts on the adjacent neighborhood as well as efficient use of limited land adjacent to the Airport.
Completed Studies	Airport Drive / Airport Parkway Improvements Scoping Study (2005)

6. Exit 12B Interchange

Summary	Analysis and possible construction of a new interchange in the vicinity of Hinesburg Road / I-89.
Purpose	To provide relief from the existing local road network east of Exit 14, to serve anticipated growth in enplanements at the Burlington International Airport, to serve business development in the eastern portion of the City, to relieve congestion from Exists 14 and 12, and to serve the future City Center.
Potential Impacts	This interchange would have a substantial impact on general traffic flows and pedestrian and bicycle traffic in the area (increasing in some areas, decreasing in others). It will also likely support business development in the area on areas that are presently partially developed. A full Environmental Impact Statement and identification of potential funding sources will be required before a interchange is constructed.
Completed Studies	Interstate Access Analysis (2010) I-89 Exit 12B Financing Options Study (2009) I-89 Exit 12B Alignment Study (2009) I-89 Urban Transportation Improvements (2003) Ground Access Study of the Burlington International Airport (2002) I-89 Exit 13 Access Improvements (1999) Chittenden County 1-89 Corridor Study (1997) I-89 / Hinesburg Road Northbound Off-Ramp (1996) Interchange Feasibility Studies at Four Locations in the CC-MPO Area (1987)

7. Swift Street Extension to Hinesburg Road

Summary	A new connector road to link Swift Street Extension to Hinesburg Road. This connector has long been identified as an important east-west connector, and has been listed in several Comprehensive Plans of the City and on the Official Map since its first adoption.
Purpose	The approval of the substantial number of homes at the Village at Dorset Park was qualified on having a safely designed second access; to provide greater east-west connectivity for City residents; to provide better emergency vehicle access for the City, and to reduce congestion on existing and overburdened intersections.

Potential Impacts	This new connector road could increase traffic on Swift Street and create an additional crossing challenge for wildlife. Care will need to be taken to develop a road connection that meets the stated purposes while protecting neighborhood character and limiting impact on wildlife.
Completed Studies	Dorset Street Corridor Plan (2007) South Burlington Planned East-West Roads Analysis (2001)

8. White Street / Midas Drive Intersection Improvements

Summary	Create a proper four-way intersection at this important link between Williston Road, City Center and the Chamberlin neighborhood. The project would involve acquisition of the property presently occupied by Accent Travel.
Purpose	To improve pedestrian and vehicular safety and flow at this important intersection, and to provide a safe entrance to the future City Center road network.
Potential Impacts	The project will involve acquisition of a privately-held property. In addition, care will need to be taken to ensure that pedestrian and bicycle needs are met at this site.
Completed Studies	Market Street Improvements Environmental Assessment (2010). US 2 Corridor Transportation Management Plan (2007) . Garden Street Project Definition Report (2015)

9. Spear Street / Swift Street Intersection Improvements

Summary	Complete improvements to the Swift-Spear intersection.
Purpose	To improve pedestrian, cyclist, and vehicular safety at this intersection.
Potential Impacts	Some realignment of this offset intersection would be needed. Possible acquisition of private land may be needed for some alternatives.
Completed Studies	Spear Street Corridor Study (2004)

10. Airport Parkway / Lime Kiln Road Intersection Improvements

Summary	Complete improvements to the Airport Parkway / Lime Kiln Road / Shamrock Road / Ethan Allen Drive intersection.
Purpose	To improve pedestrian and vehicular safety at this intersection.
Potential Impacts	Some realignment of this offset intersection would be needed. Possible acquisition of private land may be needed for some alternatives.
Completed Studies	Road Safety Audit Review- Airport Parkway/Lime Kiln Intersection (2006)

11. Vale Drive Extension

Summary	Extend Vale Drive to Swift Street commensurate with future development.

Purpose	To provide a neighborhood-scale street network to serve existing and future development and to allow for proper transportation land use planning by offering route choices to drivers while reducing congestion at existing intersections.
Potential Impacts	Care will need to be taken to minimize impacts on wetlands in the area, and to ensure that this road does not become a short cut for automobiles travelling on Spear Street and/or Nowland Farm Road.

12. Fayette Drive Extension

Summary	Extend Fayette Drive from Queen City Park Road to Bartlett Bay Road.
Purpose	To provide a secondary route parallel to US Route 7, service local businesses and homes, and providing a more pedestrian and bicycle-friendly environment for travel.
Potential Impacts	Care will need to be taken in the design of the road system to limit speed through this wide roadway, until such time as more development and on-road parking become present.

13. Tilley Drive Extension

Summary	Extend Tilley Drive to Community Drive.
Purpose	To provide a connection between Hinesburg Road and Community Drive / Kimball Ave. This road would allow drivers to avoid residential areas and provide much more direct access for travelers between those two locations. A recreation path connection was completed along the same connection in 2009.
Potential Impacts	The proposed crossing area contains wetlands and potential archeological resources. In addition, additional traffic control may be needed at the intersections of Tilley Drive / Hinesburg Road and Community Drive / Kimball Avenue.

14. Generation Drive

Summary	A new road that would connect Tilley Drive to Kimball Avenue.
Purpose	To provide a connection between Hinesburg Road and Kimball Avenue. This road would avoid residential areas and provide much more direct access for travelers between those two locations. It would serve a future Exit 12B. It would also provide opportunities for development along this new road.
Potential Impacts	Traffic control may be needed at the intersections of Tilley Drive / Hinesburg Road and Community Drive / Kimball Avenue.

15. North Jefferson Road Extension

Summary	Extend North Jefferson Road to Nowland Farm Road alongside future development.
Purpose	To provide a neighborhood-scale street network to serve existing and future development.

Potential Impacts	Care will need to be taken to minimize impacts on wetlands in the area, and to ensure that this road does not become a short cut for automobiles travelling on Spear Street and/or Nowland Farm Road.

16. New Roadway North of Williston Road, and connections to US 2

Summary	Plan for future roadway to parallel Williston Road from Patchen Road to the vicinity of the Dorset Street intersection and roadway connections at regular intervals to Williston Road.
Purpose	To provide a secondary access to the mixed use development along the north side of Williston Road, provide greater pedestrian and vehicular access for local residents, reducing congestion while improving safety along Williston Road, and potentially providing additional development opportunity.
Potential Impacts	The development of this road should be done in conjunction with improvements to Williston Road (such as eliminating curb cuts and improving pedestrian crossings) and any private development projects.
Completed Studies	US 2 Corridor Transportation Management Plan (2007); Williston Road Network Study (2015 and ongoing)

17. Sadie Lane Extension

Summary	Create a new road parallel to Dorset Street south of Cider Mill Road.
Purpose	To provide a neighborhood-scale street network to serve existing and future development.
Potential Impacts	Care will need to be taken to minimize impacts on wetlands in the area, and to ensure that this road is compatible with existing development in the area.

18. US 2 / Williston Road Corridor Improvements

Summary	Implement a series of recommended improvements to US 2 (Williston Road) throughout the City of South Burlington, including capacity, access management, safety, transit service, intersection improvements, turning lanes, streetscape, pedestrian, and bicycle infrastructure, signalization adjustments.
Purpose	To enhance the carrying capacity for all users along Williston Road and improve the appearance and functionality of the gateway to City Center and the regional for all users.
Potential Impacts	The scale of the potential improvements vary and will need to be evaluated on a case-by-case basis.
Completed Studies	US 2 Corridor Transportation Management Plan (2007); Williston Road Network Study (2015 and ongoing), Garden Street Project Definition (2015)

19. New City Park/Eldridge Street Connector

Summary	Acquire land for a new City park and create a road connection between Eldridge Street and Old Farm Road.
Purpose	The new road would serve to create a link between the historic Old Farm Road and new neighborhoods to the southwest.
Potential Impacts	Steep slopes will need to be mitigated for in the construction of this road. No road is likely needed until and unless additional development takes place along Old Farm Road.

20. Old Cross Road / Cider Mill Drive Extension to Hinesburg Road

Summary	Reserve land for a possible future street connection, with no plan for immediate construction from Old Cross Road; consider new roadway from Cider Mill Drive to intersection of Van Sicklen Road.
Purpose	To reserve land for the possible connection from the end of Old Cross Road to Hinesburg Road and to connect Cider Mill Drive to Van Sicklen Road.
Potential Impacts	Wildlife crossings and not having this connection serving as a cut-through should be carefully examined.

21. Community Drive / Kimball Avenue Intersections

Summary	Enhancements to the two intersections of Community Drive / Kimball Avenue through signals and/or roundabouts.
Purpose	To accommodate the anticipated future multimodal transportation needs associated with planned development in the area and road network connectivity in the area.
Potential Impacts	These intersections should be considered in the context of development and transportation needs in the surrounding area.

22. Kimball Ave to Williston Road Connection

Summary	Plan for future roadway between Kimball Avenue and Williston Road, west of Shunpike Road
Purpose	To provide additional non-residential connectivity between the two parallel streets of Kimball Avenue and Williston Road
Potential Impacts	Future impacts of traffic conditions should be carefully examined.
Completed Studies	US 2 Corridor Transportation Management Plan (2007)

23. Quarry Hill Road to Williston Road Connection

Summary	Plan for future connection between Quarry Hill Road and Williston Road.
Purpose	To provide secondary access between Quarry Hill Road and the housing and other facilities located there and Williston Road.
Potential Impacts	Future impacts of traffic conditions at Quarry Hill Road and Spear Street should be carefully examined.
Completed Studies	US 2 Corridor Transportation Management Plan (2007); Williston Road Network Study (2015 and ongoing)

B. Public Utilities

The quality and location of public utilities quite often determines the intensity and location of future development. The high costs of installing and maintaining public utilities warrant careful advance planning. The benefits and cost of public utilities are, in many cases, not reasonably or logically related to municipal boundary lines. Numerous areas of overlapping and/or conflicting jurisdictional authority exist. Regionalization may be the most cost effective method of providing such services.

Overview

Key issues and needs related to public utilities in the City include:

- Solid waste management and recycling remain an ongoing challenge – and opportunity – for the community.
- Telecommunications infrastructure will continue to evolve and provide new economic development opportunities in the community.

Inventory

Solid Waste. South Burlington is a member of the Chittenden County Solid Waste District (CSWD). CSWD is comprised of 18 member municipalities and was formed in 1987 to collectively provide for the efficient, economical, and environmentally sound management of solid waste generated within its member municipalities. In addition to its charter, CSWD has adopted a Waste Management Ordinance, Solid Waste Management Fee Ordinance, and Regulations for the Collection and Recycling of Solid Waste in the Chittenden Solid Waste District. These four articles comprise the district's governing documents. Recycling is mandatory within the district.

The passage of Vermont's Act 78 in 1987, as well as federal regulations developed by the Environmental Protection Agency, required the closing of unlined landfills. CSWD opened the first publicly-owned, regional, double-lined landfill in the state in 1992 in Williston. This landfill was an interim, short-term landfill intended to bridge the gap between the existing unlined landfills used by many members and the planned long-term regional lined landfill. South Burlington closed its municipally-owned, unlined landfill within two months of the opening of CSWD's interim regional landfill. The interim landfill reached capacity and closed in August 1995. Since the closing of the interim landfill, solid waste destined for disposal has either been delivered to one of two transfer stations operating within the district or directly hauled to lined landfills located outside of the district.

The siting of a long-term regional landfill has been a priority of CSWD since 1989. It is widely recognized that a local, publicly-owned, long-term disposal option is an essential component of the district's comprehensive solid waste management system. CSWD identified a site located on Redmond Road in Williston for its proposed regional landfill as a result of a siting process that utilized extensive public participation.

In 1992, after numerous unsuccessful attempts to negotiate a purchase of the selected site, CSWD formally initiated eminent domain procedures to acquire the site and became the property owner in 2009. A 2012 Post-Closure Landfill permit has been issued and the City is operating under its terms.

CSWD currently operates a drop-off center at the City's former landfill site on Patchen Road. The drop-off center accepts solid waste, recyclables and special wastes such as tires, scrap metal, leaves and brush. Curbside pick-up of trash and recyclables is available from private haulers.

New statewide requirements for mandatory composting are being progressively deployed through 2020. The City should continue to update its operations as well as its regulations related to solid waste disposal facilities.

Telecommunications. South Burlington residents and businesses have access to the telecommunications services (land line telephone, cell phone, cable television, and broadband internet) from various providers. Affordable and convenient access to state-of-the-art telecommunications services is an important component of the City's quality of life, economic development strategy and educational opportunities.

Natural Gas. Vermont Gas Systems, Inc. (VGS) supplies natural gas to the City. The natural gas is imported from Canada via the TransCanada Pipeline, entering Vermont Gas Systems' main pipeline at the border in Highgate. The company has a network of more than 650 miles of underground transmission and distribution lines in its Vermont service area. Natural gas has been the primary home heating fuel for new development since natural gas became available in South Burlington in the 1960s.

Electricity. Green Mountain Power Company supplies electrical power to South Burlington through a network of transmission lines, substations and distribution lines. It has two 34.5 kV sub-transmission corridors in the City.

Vermont Electric Power (VELCO) has a 115 kV transmission line that extends south along the railroad tracks from Burlington to Shelburne, then turns east to head toward Williston. VELCO's Queen City substation is also located in South Burlington off Central Avenue.

Analysis and Challenges

Telecommunications. Private utilities that provide telecommunications services should offer state-of-the-art technologies. Given the rate of change in the telecommunications sector, this will require continuous upgrades to telecommunications infrastructure. As with infrastructure for other basic services, telecommunications lines, antennas and towers have become part of the City's built environment. The siting of telecommunications infrastructure should consider issues of aesthetics, safety and efficiency. The use of existing structures, sites and utility corridors is preferred over new development.

Natural Gas. Better coordination between the City and VGS has been achieved by exchanging future construction plans. Through improved communications, construction projects may be implemented at lower costs, with less earth disturbance, and fewer disruptions. In addition, the review of new private development projects should include the effects of any necessary gas main extensions.

Electricity. It has been recognized for a number of years that demand is growing and increased electric system reliability is required in the greater Burlington metropolitan area. The utilities have been taking action to address the reliability and supply issues. Two recent transmission line projects upgraded the infrastructure serving Chittenden County located South Burlington.

- The Northwest Reliability Project included the replacement of approximately 27 miles of 34.5 kV electric lines between New Haven and South Burlington with a new 115 kV line. In addition, a number of substations were upgraded, including the Queen City substation.
- The East Avenue Loop and supporting projects included various upgrades in South Burlington. A 34.5 kilovolt (kV) sub-transmission line was installed from the McNeil generating plant to the VELCO substation at East Avenue, near Centennial Field. Between the Essex substation in northern Williston and the East Avenue substation in Burlington, two 115 kV transmission lines on single poles replaced a single line located on double poles.

Future Needs and Trends

Solid waste management is and will remain a challenging issue for all communities. As technologies improve, opportunities for increased diversion of materials from the waste stream will become economically viable. CSWD presently offers free recycling of most plastics, paper, glass, and metals. Drop-off composting is also provided free of charge; a State of Vermont requirement for composting begins to phase in in 2015.

Future trends related to gas and electricity are closely tied to energy needs and supply in the City and elsewhere. See the Energy component of the Plan under Grey Infrastructure for details.

Public Utilities Strategies

Strategy 50. Engage in discussions with major communications services providers to ensure that South Burlington is on the leading edge of broadband connectivity throughout the City and particularly in our business and commercial centers. Look for opportunities to increase redundancy and choice among service providers.

C. Energy

Energy is a major factor in the cost of living and the cost of doing business in the City of South Burlington. Our energy use practices require substantial imports of energy, which expose us to significant economic and geopolitical risks. Further, the cost of imported energy could more appropriately be invested in the local and US economy. Our heavy reliance on fossil based fuels and the CO_2 it creates are contributing to global climate change. All of these reasons make it important to look for ways to conserve energy and to support local sources of renewable energy.

At the municipal level there are many actions that can be taken: effective land use planning and regulation, building codes, programs to promote conservation and efficiency and improved transportation systems can further efforts to create clean, reliable, economical and energy efficient systems. In addition, by working with larger government bodies additional progress can be made on transportation issues.

Overview

Key issues and needs related to energy identified in this plan include:

- Transportation is the leading source of energy consumption in South Burlington, followed by commercial and residential sector fuels and electricity.
- In 2008, the City Council signed on a challenge with the Environmental Protection Agency (EPA) to reduce municipal energy consumption by 10 %.

Inventory

Energy Use. In 2008, South Burlington residents formed a new volunteer energy committee to address energy consumption and production in the community. The formation of this committee came shortly after the City Council signed on to the Environmental Protection Agency's 10% Municipal Energy Challenge. In 2009, South Burlington completed a greenhouse gas emissions inventory for the entire City. This study identified the largest uses of energy and sources of CO_2 in the City. The major categories of use are here ordered from highest to lowest:

- Transportation
- Commercial Electrical Usage and Heating
- Residential Heating & Electrical Usage
- Municipal

Transportation includes two components: the amount of miles travelled and the efficiency of the vehicles. Both of these are difficult for a single city alone to change. However by working together with larger government bodies progress can be made.

Collectively, the heating and electrical use of residences and commercial buildings is very significant. The design and construction of buildings strongly influences the amount of energy needed for heating and cooling, as well as the amount of electricity needed for lighting. Site planning such as locating buildings to maximize southern exposures and providing windbreaks can reduce the amount energy required to light, heat and cool structures. The design and location of commercial development and housing subdivisions, orientation of buildings, construction methods, placement and type of windows, and type and location of landscaping can have a significant impact on energy use.

Energy Use by City Government. The City's primary energy use consists of electricity, natural gas and motor fuel. The City's largest energy expenditure is for operation of the sewage treatment facilities. In the spring of 2010, the City completed energy audits of each of its municipal buildings. This information is being used to target investments in renovations to provide energy and dollar savings.

Transportation Energy Conservation and Efficiency. Recognizing that transportation is the largest use of energy in South Burlington, transportation energy efficiency and conservation is important. While South Burlington will continue to be a transportation hub due to its role as part of Vermont's largest metropolitan area and the presence of major highway and interstate corridors, work should continue to provide alternatives to single-occupancy commuter traffic. In addition, much can be done to reduce locally generated traffic volumes and residents' reliance on personal automobiles.

Energy Supply. Transportation in the City is primarily fueled by gasoline and diesel from hundreds of independent dealers and suppliers. Natural gas provides the majority of heating energy and it is provided by Vermont Gas Systems (VGS). Heating oil is the next largest, although a much smaller, source of heating energy and is supplied by many independent suppliers. Electricity throughout the City is supplied by Green Mountain Power (GMP).

Both GMP and VGS indicate that they have sufficient capacity to adequately serve growth in the City over the life of this plan, although some areas of the City are being geographically targeted for electrical load reductions due to limited distribution capacity. Both companies offer energy conservation programs and incentives to both businesses and residences.

There are no conventional power plants located in South Burlington. In 2010, however, several applications for small- and mid-sized solar power generation were submitted to the Vermont Public Service Board for review and approval. Following this, in 2011 the largest solar array in Vermont (at the time) opened in the City, with an estimated output nearing two megawatts annually. Other similarly sized arrays would follow: Claire Solar, located on Hinesburg Road, and a facility on the Air National Guard property at the Burlington International Airport. Medium sized arrays can be found on Spear Street (next to the National Forest Service Building), behind Cairns arena at Veterans Memorial Park, on top of the Airport parking garage, and integrated within

the South Village development on Spear Street. There are additional, smaller rooftop or ground-mounted solar panels scattered throughout the City.

Small-scale wind energy in South Burlington is limited by the high density of development and unfavorable climatic conditions. Solar energy generation provides greater opportunities for a renewable, alternative power source for City residents and businesses.

Analysis and Challenges

Energy Use. It is now widely recognized that human-caused emissions of greenhouse gases, largely a direct result of energy consumption, are having a measurable impact on the earth's climate. Increases in global temperatures are believed to already be causing measurable changes in the frequency and intensity of extreme weather events, rising sea levels, and a northward expansion in the range of tropical diseases and pests. These and other results of climate change have the potential to pose local and worldwide economic and environmental threats.

Vermont has a Residential Building Energy Code that sets a minimum standard of efficiency for new homes and residential additions over 500 square feet and Commercial Building Energy Standards for all commercial buildings and residential buildings of four or more stories. The City could require all new construction to be more energy efficient through adoption of local building codes. South Burlington's land use regulations could mandate or offer incentives for increased energy efficiency.

While efforts to improve new construction are very important, it is even more important to address the existing built environment. While the community may add two percent of new space through growth each year, 98 % of the building stock the following year will be preexisting structures. Programs that specifically target efficiency improvements in existing commercial and residential structures must be put in place. Energy savings can be realized by retrofitting existing buildings with insulation and air sealing, more efficient doors and windows, more efficient lights, more efficient mechanical systems and more efficient appliances.

Efficiency Vermont has programs and resources to help customers reduce their monthly electric bills, including information about rebates and tax incentives available for energy-saving purchases. Income-eligible households can participate in the Weatherization Assistance Program, as well as the Fuel Assistance Program, offered by the Champlain Valley Office of Economic Opportunity. Vermont Gas Systems also sponsors efficiency programs to assist their customers with energy conservation.

South Burlington can also promote reduced transportation energy use through the development of alternative transportation modes and through appropriate land use planning. For example, the City is attempting to become a more pedestrian-oriented city. The development of pedestrian and bicycle paths, greenways and other trails provide alternative ways of accessing the City's commercial, residential and recreation areas. With the development of City Center, the City is taking steps to make transit

use easier. The City Center, with its mix of commercial and residential uses, will also promote walking and therefore reduce reliance on personal automobiles.

Future Needs and Trends

South Burlington is a very desirable place to live and to grow a business and it is expected that growth will continue at its historical pace as discussed in the Social Infrastructure chapter of this plan. The City needs policies to accommodate this growth while maintaining and improving the quality of life for its residents and improving the business climate while working hard to reduce energy related costs and impacts to the environment.

Many of the topics discussed above and the detailed strategies in the next section directly address the cost of living and of doing business. More efficient buildings translate to lower annual operating costs. Our efforts to improve transportation options can reduce the cost of transportation as well as offering healthy alternatives to automobiles. Local renewable energy provides clean energy at predictable costs for decades to come.

Energy Objectives

Objective 23. Achieve a reduction of 20% in carbon dioxide-equivalent emissions from 2009 levels by 2020 through an increase in renewable energy production and reductions in energy use in the following sectors: transportation, commercial/industrial, residential, municipal/school.

Objective 24. Facilitate and encourage community-based renewable energy production in locations that do not contradict or interfere with the City's open space and resource conservation objectives, specifically as identified in Section 3.2D of this plan.

Energy Strategies

Strategy 51. Develop incentives for existing and new buildings to meet or exceed state energy building code, Energy Star, or Leadership in Energy and Environmental Design (LEED) standards.

Strategy 52. Work with electric utilities and other partners to establish the electric transmission, distribution, and charging infrastructure to support increased use of electric vehicles at home, work, park-and-ride locations, and in downtown parking locations.

Strategy 53. Explore the creation of a clean energy assessment district to facilitate residential and commercial financing of clean energy improvements.

Strategy 54. Promote energy efficiency through well-designed buildings, siting and landscaping, and encourage increased demand side management programs and the use of site-specific renewable energy resources.

Strategy 55. Consider energy efficiency when making upgrades to City utilities and infrastructure such as water and sewage treatment, street and parking area lighting, and traffic signals so that the more efficient solution is chosen if it is projected to pay back or break even over the lifetime of said investment.

Strategy 56. Continually evaluate the minimum levels of street lighting needed for pedestrian and vehicular safety and security, in the context of energy savings and reduction of light pollution.

Strategy 57. Consider fuel efficiency when upgrading fleet vehicles for the City and school system and maintain vehicles at peak fuel efficiency.

Strategy 58. Encourage owners and developers to explore the possibility, and feasibility, of cogeneration and/or district energy in higher-density areas, notably City Center.

Strategy 59. Encourage installations of photovoltaic electric and solar hot water heating for residential and commercial buildings, and the development of medium-scale photovoltaic electric generating facilities within the City.

Strategy 60. Seek opportunities to develop photovoltaic electric production on City and school grounds and building rooftops, where not in conflict with other goals of this plan.

D. Resource Extraction

The extraction of resources has historical significance in South Burlington, with several quarries having operated in the community through the 20th Century. Agricultural activities long dominated the landscape, with forestry playing a more minor role. At least one of the City's quarries, located near I-89 towards the Williston town line, owes its origins to the construction of the Interstate.

Overview

Key issues and needs related to resource extraction include:

- Sustainable resource extraction in the context of the development and natural resource and conservation goals of the City.

Inventory

Mineral Extraction. South Burlington is currently home to two quarries:

- An operating quarry immediately south of I-89, near the Meadowlands Business Park. Its only access is through the Town of Williston and so both communities are working cooperatively on its continued use. This quarry submitted an application for continued and expanded use in 2015.
- A quarry at the south end of the airport. This quarry is not presently active.
- Other former quarries in the City are no longer active and have been closed.

Forestry. South Burlington has limited blocks of contiguous forests. Due to this, combined with the land value and development patterns in the City, active commercial forestry is generally not economically viable and has been extremely limited. The City has, however, for the past several years, collaborated with the University of Vermont to tap several sugar maple trees in the City-owned Wheeler Nature Park. Pursuant to VSA 24 Chapter 117, accepted silviculture practices are exempt from local zoning.

Analysis and Challenges

Mineral Extraction. Given the City's development and conservation patterns, quarrying operations require careful management as existing quarries are relatively close to the interstate, developed areas and natural resource conservation areas. Access to the quarry nearest I-89 in the Town of Williston is appropriate as the City's road network is not designed for such operations.

Future Needs and Trends

While limited amounts of resource extraction are expected to continue, it is not expected that new quarries or large scale forestry operations will be established in the City.

2.4. Blue Infrastructure

Water flows throughout the City of South Burlington, creating a "blue" network throughout the community. Similar to the network of roads and utility lines that make up the City's "grey" infrastructure, the natural and constructed "blue" elements provide a network that sustains human and wildlife populations.

The City's blue infrastructure includes brooks and ponds, drainage ways, stormwater facilities, groundwater resources, potable water pipes and facilities, and wastewater treatment pipes and facilities. The natural and constructed elements of this system are interdependent and linked to the City's two major water resources - Lake Champlain and the Winooski River. Effective management and planning for this blue infrastructure can maintain and augment the health of the City's watersheds while accommodating development and change in the built environment.

Our rivers and lakes can also pose a flood risk to our community that needs to be understood and planned for. This chapter also includes a section on flood hazards and flood emergency preparedness and resiliency.

A. Surface and Ground Water Resources

Overview

Key issues and needs related to the City's surface and groundwater resources identified in this plan include:

- Protection of water source protection areas.
- Conservation of highly functional wetland areas.
- Rehabilitation of impaired waterways in South Burlington.
- Understand flood hazards and make plans for flood emergency preparedness and resiliency.

Inventory

Watersheds. A watershed is the region from which a river or water body receives its supply of water. This generally includes the system of streams, tributaries and wetlands that feed into the body of water. Seven main watersheds exist within the City of South Burlington. The flows from all of the surface and groundwater systems in the City eventually reach Lake Champlain.

1. **Potash Brook Watershed.** The largest of the City's watersheds, Potash Brook, covers 43 % (7.1 square miles) of South Burlington and is the largest drainage area in the City. The Potash Brook has its source within the City limits and flows southwesterly into Lake Champlain. Much of the developed area in

South Burlington drains to Potash Brook and eventually Lake Champlain. Along its primary reach, which follows Kennedy Drive and I-189, significant natural buffer areas have been established. Many of the brook's tributaries, however, are located immediately adjacent to developed areas, leading the brook's classification as "stormwater-impaired" by the State of Vermont Department of Environmental Conservation. The main reach of the brook is paralleled by a pedestrian trail system for much of its length.

2. **Muddy Brook Watershed.** The Muddy Brook flows northward to the Winooski River for approximately 5.7 miles from its headwaters at Shelburne Pond and forms the City's eastern boundary with Williston. The larger watershed also incorporates a series of smaller tributaries that drain into the Pond, some of which have their headwaters in South Burlington. Muddy Brook is listed as an impaired watershed due to elevated levels of toxins, nutrients, and temperature. This is generally attributed to historic development and agricultural practices along the banks of the brook. The Winooski Valley Park District manages pedestrian trails and recreation paths along the Muddy Brook and at Muddy Brook Park at the northern delta to the brook. Further south, Burlington International Airport maintains a natural area that is open to the public and accessible from Van Sicklen Road.

3. **Bartlett Brook Watershed.** The Bartlett Brook watershed, which includes the North Brook, drains the southeastern portion of the City, including commercial, light industrial, and residential areas. It is listed as impaired due to stormwater loads. It has also been an area prone to flooding, especially in the residential neighborhood that bears its name. The City enacted a special overlay zoning district in the 1980s to begin to address the flooding issues. More recently, in 2009, the City established this area as a stormwater management overlay district, requiring all larger-scale development to model rainwater runoff and make use of low impact development techniques.

4. **Centennial Brook Watershed.** Centennial Brook is located primarily within the City of Burlington's limits, but has its headwaters in South Burlington's Chamberlin neighborhood. Large portions of Centennial Brook are located within conserved lands: the City-owned DeGraffe natural area and the UVM-owned Centennial Woods. In addition, a substantial portion of the South Burlington portion of the watershed is located on a large undeveloped parcel adjacent to I-89. Centennial Brook also drains the developed areas along Williston Road. The brook is classified as impaired due to stormwater runoff from development and impervious surfaces located beyond the buffer areas.

5. **Englesby Brook Watershed.** The Englesby Brook watershed covers a small portion of South Burlington located north of I-189 and east of Shelburne Street. Predominantly located in the City of Burlington, it is impaired due to excessive stormwater originating from both communities. The South Burlington portion includes residential and commercial properties.

6. **Winooski River Watershed.** Forming the northern border of South Burlington, the Winooski River and its watershed brings South Burlington into partnership with many other communities. The area of the City north

of the Burlington International Airport drains directly into this river, and includes the Country Club Estates neighborhood, an active farm, light industry, and a mix of residential and commercial uses along Lime Kiln Road. A portion of the Ethan Allan industrial park is located immediately adjacent to the 100-year floodplain.

7. **Lake Champlain Watershed.** A small portion of the City drains its water directly into Lake Champlain. This includes Red Rocks Park, the Queen City Park neighborhood, and properties west of the railroad tracks that travel parallel to Shelburne Road. Impervious surfaces are a potential impairment problem in the Queen City Park neighborhood; otherwise, the land is relatively undeveloped and natural in this area.

Rivers and Streams. The City's primary rivers and streams include the Winooski River, Muddy Brook, Potash Brook, Bartlett Brook, and Centennial Brook. South Burlington also has a network of smaller streams that includes tributaries to Lake Champlain, as well as streams that drain to Shelburne Pond.

The Winooski River forms the northern boundary of the City. Throughout its lower reaches, it is tapped for its ability to produce electric power. Communities along the river use it to receive treated sewage. The agricultural soils of its floodplain are still important in our regional economy. The lower Winooski retains much of the feeling of a natural river. Scenic vistas abound from its banks and spectacular gorges offer access to the drama of nature and to the geologic past. Two parks line the river in South Burlington: a river access point at the confluence of the Muddy Brook along National Guard Road, and Lime Kiln Park, an overlook and natural area adjacent to the Lime Kiln Bridge.

Floodplains. Floodplains are those areas that are under water during periods of high flow or high lake level. For regulatory purposes the floodplain is defined consistently with the federal definition of "area of special flood hazard" and the Floodway – as identified by the Federal Emergency Management Administration (FEMA) and the National Flood Insurance Program (NFIP). The Special Flood Hazard Area is the area subject to a 1% or greater chance of flooding in any year. While these lands are expected to flood on average once every 100 years, floods can and do occur more frequently. The Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot at any point. The floodway is the area where the fastest moving and most destructive floodwaters will flow during the 100-year flood. Thus, while all land within the floodplain will be wet during a 100-year flood, the most damage to property and loss of life will occur in the floodway.

River Corridors. River corridors include the area around and adjacent to the present day river channel where fluvial erosion, channel shape change, and channel meandering are most likely to occur. River corridor widths are calculated to represent the narrowest section of riparian land required to contain the equilibrium condition width of the channel. Data collected as part of a geomorphic assessment are used

in calculating river corridor widths where available. River corridors are specifically defined by the State of Vermont Department of Environmental Conservation.

Fluvial Erosion Hazard Zones. While some flood losses are caused by inundation (i.e. waters rise, fill, and damage low-lying structures), most flood losses in Vermont are caused by "fluvial erosion". Fluvial erosion is caused by rivers and streams, and can range from gradual stream bank erosion to catastrophic channel enlargement, bank failure, and change in course, due to naturally occurring stream channel adjustments. The areas most subject to this type of erosion are called "Fluvial Erosion Hazard Areas (FEH)" and these areas have been identified and mapped in accordance with accepted state fluvial geomorphic assessment and mapping protocols. A FEH area includes the stream and the land adjacent to the stream. It identifies the area where stream processes can occur to enable the river to re-establish and maintain stable conditions over time. The area boundaries also attempt to capture the lands most vulnerable to fluvial erosion in the near term, as well as the area needed by a river to maintain equilibrium.

How Fluvial Erosion Occurs:

Every river has a probable form, reflecting its complex interaction of many factors, including inputs from its watershed (water, sediment, ice, woody debris) as well as the physiographic setting (geology, soils, vegetation, valley type). When all the elements are in balance, a river is said to be in "dynamic equilibrium." A river in equilibrium can carry its load of water, sediment, and debris, even during high flows, without dramatic changes in the width, depth, or length (slope). A dramatic change in any of these elements will tilt the balance and lead to changes (or adjustment) as a river attempts to move back toward an equilibrium condition. This adjustment is often expressed as fluvial erosion, or major changes in channel dimension and location, as a river attempts to regain equilibrium.

One common mode of channel adjustment seen throughout Vermont is the response of a river to straightening. When a river is straightened, the slope of the channel is increased. As a result, the river has more power, and a greater ability to carry sediment, and begins to incise, eroding the stream bed. The incision leads to a situation where the river becomes disconnected from its floodplain. Without floodplain access, which serves the essential purposes of slowing floodwaters and storing sediment, stream banks are subjected to the full power of flood flows, leading to extensive fluvial erosion. If left alone, the river will eventually erode its banks enough that it can lengthen its channel, regain a more stable slope, and develop a new floodplain at a lower elevation.

Lake Champlain. South Burlington has 2.3 miles of frontage along Lake Champlain, a unique scenic and recreational resource that is widely used by both residents and visitors nearly year-round. The lake is the City's potable water supply through the Champlain Water District and some private water intakes.

The lakeshore is comprised of a mix of natural parkland (Red Rocks Park), residential neighborhoods (Queen City Park and Bartlett Bay), stream outflows, and one large landholding known as Allenwood. While there are great pressures for private and public access to the lake, a combination of topography and physical constraints, historic land ownership and development patterns, and transportation corridors (particularly the presence of the rail line) have limited the accessibility and suitability of some of the shoreline for development. As a result, a significant portion of South Burlington's lake frontage remains largely undeveloped. Red Rocks Park remains the only public access point to the lake, however, and there are no public boat ramps in the community.

Wetlands. Wetlands play an important role in maintaining the quality of surface and groundwater in South Burlington. Class II and Class III wetlands are found throughout the community. Wetlands serve as stormwater storage and control the flow of streams, are natural filters for sediments and surface runoff contaminants, and provide habitat that supports many species of plants and animals including game fish in Lake Champlain and various waterfowl. They are typically classified by their functions and values.

Wetlands are a critical part of open space preservation and cannot be replaced once they have been disturbed. Disturbance of wetlands can include seemingly harmless practices such as mowing, the use of fertilizers, and the use of pesticides. Swamps, bogs, and marshes are important ecological systems and resources. At every level of government, wetlands are being recognized for the values they contribute. Even small, incremental reduction of minor wetlands can cause cumulative damage to the wetland's ability to both filter pollution and mitigate storm and flooding events.

There are several large wetland systems within the City including those associated with Potash Brook, Muddy Brook and the Winooski River. There are also extensive wetland systems between Spear Street and Dorset Street and in the southeast corner of the City near Hinesburg Road. It should be noted that there may be additional wetlands that are not currently mapped.

Aquifers & Wells. Groundwater, the water that filters into the ground and travels slowly through the pores of soil and cracks of rock, is a precious natural resource. Groundwater is a source of potable water for some City residents. Several homes in the Southeast Quadrant get their water from private wells. In the Queen City Park neighborhood, approximately 80 homes are connected to the Fire District #1 water supply, which is fed by a well at the end of Pavilion Avenue.

Contamination of groundwater can pose health issues or other water quality problems. Materials such as road salt, hydrocarbons, pesticides, and fertilizer are typical of the water-soluble toxins that can pollute aquifers. The State of Vermont maps and monitors wells and aquifer recharge areas. There is a required buffer from this infrastructure, particularly with respect to wastewater disposal systems.

Analysis and Challenges

Stream Channels and Riparian Buffers. Flowing water is a critical aspect of the City's character and environmental quality. These rivers serve as habitat for fish and wildlife, as natural flood control features, and as an attractive environment in which to live. Erosion control and stormwater management are important measures to restore and protect these resources. Stream channels are naturally dynamic systems that erode and deposit sediments in predictable patterns based on the velocity and volume carried by the stream. Alterations to rivers, streams and tributaries can often have unexpected downstream effects. Upstream activities that change the erosion/deposition balance will change downstream dynamics. This includes physical changes like straightening, rip-rapping banks, and dredging sediment, as well as changes in land use and the creation of additional impervious area. Uncontrolled stormwater runoff from impervious areas can increase stream flows during storm events and cause stream bank erosion.

The City presently has natural buffer requirements around perennial streams and brooks. This strategy has proven somewhat effective, but does not take into account changes in stream course over time. The City and Vermont Agency of Natural Resources have completed geomorphologic assessments of the City's various stream segments, and now that the data collection is completed, there is an opportunity to develop more advanced stream channel protection standards or other strategies in response to the identified risk. The City has also established Vermont's first stormwater utility. The utility manages stormwater in a cost effective way for all property owners in South Burlington and undertakes large-scale stormwater treatment and flow control projects to reduce the impact that existing impervious area is having on streams. Stormwater management is discussed in more detail in the following section.

Flood Resiliency. The Vermont State Hazard Mitigation Plan (2013) identifies flooding as the most common natural hazard event in Vermont and the damages from flooding are due to inundation and fluvial erosion. As of July 1, 2014 municipal plans are required to include a flood resiliency goal and element. The requirements include identification of flood hazard and fluvial erosion hazard areas; designates those areas to be protected, including floodplains, river corridors, land adjacent to streams, wetlands, and upland forests, to reduce the risk of flood damage to infrastructure and improved property; and recommends policies and strategies to protect these areas and mitigate risks. This Plan calls for avoiding new development in these areas and eliminates exacerbation of flooding and fluvial erosion, encourages protection and restoration of these areas, and plans for flood emergency preparedness and response.

Identification of the flood and fluvial erosion hazard areas, and the areas to be protected were described in this chapter above, and are mapped in this plan. The City of South Burlington All Hazards Mitigation Plan (AHMP) developed in conjunction with the Chittenden County Regional Planning Commission (adopted in 2011, planned for update in 2016) also identifies the most significant hazards. This plan should be reviewed often to ensure accuracy and that all hazards are being adequately addressed.

The mitigation strategies identified in the most recent All Hazards Mitigation Plan should all be adopted by reference as strategies in this Plan.

South Burlington protects its floodplain through flood hazard zoning regulations which limits the amount of damage by limiting the amount of development and fill in floodplains. These development regulations also present opportunities to maintain natural open spaces and develop needed recreation facilities. The largest designated floodplain lies adjacent to the Winooski River. Fluvial Erosion Hazard areas and River Corridors are partially protected where they overlap with the regulated floodplains, but in many locations in the City these areas are not regulated. By not identifying these areas in our LDRs, landowners and residents are likely unaware of the risk associated with flooding in these areas.

A key component to achieving flood resiliency is a comprehensive approach to stormwater management that can intercept water that could otherwise concentrate and cause flood damage. See Stormwater section for more information.

Water Quality. Historically, water pollution has been attributed to two primary sources: point and non-point. Point sources, such as wastewater treatment facilities, have been upgraded in Vermont over the past three decades to where they are today much less of an issue than non-point sources, which cannot be identified with any particular location or outfall. Non-point source pollution is difficult to control because the source of the pollution is activity that occurs throughout a watershed at homes, parking areas, roads, farms, and businesses rather than at a single point.

Non-point pollution, including stormwater runoff, plays a critical role in the quality of waterways. Agricultural runoff and pesticide use also falls into this category. The community in the past has explored the possibility of restricting pesticide use. While overall use of pesticide use is governed solely by the state, the City has enacted a restrictive policy on the use of both fertilizers and pesticides on City property.

Future Needs and Trends

Water quality issues will continue to be a challenge within South Burlington as the population grows, wildlife is encouraged to be maintained, and stricter standards for water quality are adopted at the federal, state, and local levels. Water quality in South Burlington is closely connected to stormwater management, which is further discussed in the next chapter of this plan.

B. Stormwater

Overview

Key issues and needs related to the City's management of stormwater identified in this plan include:

- Maintain the stormwater treatment and conveyance systems currently in place.
- Repair and replace aging infrastructure.
- Construct large-scale stormwater improvement projects to remove streams from the State of Vermont 303(d) list of impaired waters and to reduce the amount of phosphorus flowing to Lake Champlain.
- Maintain compliance with state and federal stormwater permits and assist residents with stormwater permit compliance.

Inventory

Stormwater Runoff. All of South Burlington drains into Lake Champlain. The City of South Burlington contains all or a portion of five streams (Bartlett Brook, Centennial Brook, Englesby Brook, Munroe Brook and Potash Brook) impaired by stormwater runoff. Stormwater impaired watersheds cover approximately 61 % of the City. By the late-1990s, it was widely recognized that unmanaged stormwater was causing water pollution, erosion, flooding and unstable stream banks in areas of South Burlington and throughout Chittenden County.

Stormwater runoff is generated by rainfall that does not soak into the ground. Construction of impervious surfaces (roads, rooftops, parking lots, sidewalks, etc.) increases the amount of stormwater runoff. These increased volumes of runoff will in turn increase stream flows, which results in stream bank erosion and flooding. In addition, undersized or poorly maintained stormwater management systems are susceptible to failure and can exacerbate problems related to flooding and water quality.

Stormwater management is, for the most part, managed on a property-by-property basis, with the exception of systems within the roadway and certain larger development areas such as the Airport or newer residential developments. The US Environmental Protection Agency is in the process of establishing a phosphorus TMDL for Lake Champlain.

Stormwater Utility. In 2005, the City established the first stormwater utility in Vermont with the aim of addressing these issues. The utility is an efficient way to identify and manage stormwater problems, projects, and infrastructure upgrades. The utility provides a stable and adequate source of revenue to complete required maintenance and manage stormwater related activities. The utility employs full-time staff dedicated to stormwater management and working to develop a comprehensive stormwater program and plan for needed capital improvements.

Presently, the City of South Burlington owns and maintains a stormwater system, separate from the sanitary sewer system. The stormwater system includes conveyance piping, storm drains, culverts, stormwater outfalls and stormwater treatment practices (e.g. detention ponds, constructed wetlands, hydrodynamic swirl separators, etc.). There are approximately 196 miles of pipes, ditches, culverts or other means of stormwater conveyance in South Burlington. In addition, there are over 6,300 storm drains within the City, approximately 3,200 of which are publicly owned.

City residents and businesses share the costs of, and receive services from, the stormwater utility. Some of the services provided by the stormwater utility include: evaluation, maintenance and improvement of drainage infrastructure, culvert evaluation and replacement, assists residents with state permitting, watershed planning and water quality sampling. The stormwater utility also maintains the City's compliance with the Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit is a federally mandated permit administered by the Agency of Natural Resources in Vermont. The MS4 permit requires that the City implement six minimum measures related to stormwater management ranging from public education and outreach to illicit discharge detection and elimination.

In order to pay for these services, all developed properties in South Burlington are assessed a stormwater utility user fee. This fee appears on City sewer and water bills. Fees for commercial properties are calculated using a careful analysis of impervious surface area on properties throughout South Burlington. There is a set fee for single-family homes, duplexes and triplexes. All other property owners (includes condominium ownership properties, businesses, institutions, and government) are assessed a fee based on the actual amount of impervious surface on the property.

Analysis and Challenges

Stormwater is slated to be among the key challenges for South Burlington for the foreseeable future. Federal and state requirements for individual properties - aimed at system-wide improvements - have begun to be applied. In 2014, the updated federal MS4 permit was issued, giving the City 20 years to make necessary improvements to its impaired watersheds. Homeowners throughout South Burlington have worked effectively with the City to leverage federal and state grant funding to aid with these efforts and construct treatment systems that will meet present and future needs for stormwater management.

The City has been actively engaged in establishing and maintaining stormwater systems to better manage public water flows. A key strategy employed by the City in recent years has been to encourage - and in some areas require - on-site stormwater infiltration through low impact development (LID) techniques. A challenge of this, however, is that while some LID techniques support compact development (such as reduced pavement widths) others may be contradictory (such as leaving large open areas on properties).

All improvements to stormwater infrastructure have a dual benefit of reducing flood risk and increasing flood resilience. A key Best Management Practice towards managing floodplains and river corridors is to slow, spread, and infiltrate runoff. By reducing the peak volume reaching our rivers, we are reducing potential flooding.

Future Needs and Trends

It is expected that Federal and State regulations will continue to apply to an increased number of smaller properties in South Burlington and throughout the country. In the short term, these standards will require substantial retrofits at significant expense. In the long term, significant effort in the area of $50 million will be required to maintain infrastructure and stay in compliance with increased federal and State water quality regulations.

A number of studies have shown that several streams in South Burlington have shown elevated levels of chloride. The State of Vermont Department of Environmental Conservation is- in 2015- in the process of determining the extent of statewide chloride issues and working towards draft regulations to address them. South Burlington will monitor these updates and work towards planning to address requirements as necessary.

Surface Water, Groundwater, and Stormwater Objectives

Objective 25. Reduce the number and forms of impairments of waterways in South Burlington by 2033.

Objective 26. Protect and improve watershed, stream, and wetland system natural processes, specifically for stormwater treatment, riparian and aquatic habitat, and floodplain and river corridor protection.

Objective 27. Include mapped river corridors (fluvial erosion hazard areas, floodplains, and riparian areas) within designated open space areas intended for hazard mitigation, resource conservation and compatible forms of passive outdoor recreation.

Objective 28. Plan for flood emergency preparedness and response.

Surface Water, Groundwater, and Stormwater Strategies

Strategy 61. Pursue opportunities for acquisition and restoration of open space along year-round streams in South Burlington and actively enforce against encroachments to protect these resources.

Strategy 62. Review geomorphic assessment results for action items identified and pursue implementation.

Strategy 63. Review fluvial erosion hazard areas and river corridors and adopt river corridor protection bylaws and maps.

Strategy 64. Plan culvert replacements that consider both aquatic organism passage and geomorphic compatibility for any undersized culverts in conjunction with roadway improvements.

C. Potable Water

Overview

Key issues and needs related to the City's potable water resources identified in this plan include:

- Provision of safe water supply at reasonable costs.
- Maintenance of aging water supply system.

Inventory

Water Distribution System. The South Burlington water distribution system serves most developed land within the City boundaries. The City water department maintains almost 100 miles of distribution pipeline within South Burlington. The water distribution system is depicted on *Map 6.

The South Burlington municipal distribution system consists of two service areas:

- The Main Service area includes the west and northern parts of the City.
- The High Service area includes the southeast part of the City.

Most of the City's residents are supplied water through the distribution system, with notable exceptions being those in Queen City Park (Fire District #1), some residents along the lake front (Bartlett Bay area), and some residents in the Southeast Quadrant whose homes pre-date recent infrastructure extensions. Water distribution lines have been extended into much of the Southeast Quadrant during the past two decades as development has occurred.

Maintenance and expansion of the City's water system occurs in accordance with the South Burlington Water Department Master Plan, which specifies the location and size of future water mains. The cost of expansion is borne by those requesting it, while maintenance costs are paid for by user fees. Water supply plans for new developments are reviewed to ensure adequate flows for fire protection, and, as a result, residential and standard commercial use.

Three transmission mains (one for the Main Service area and two for the High Service area) extend from the Champlain Water District water treatment plants. The distribution piping in the City of South Burlington varies and the department continues its efforts to replace old, undersized pipes. This is important for provision of reliable and safe drinking water, as well as for improving the quantity and pressure of water available for fire suppression. The water department also seeks to regularly upgrade related infrastructure such fire hydrants, water meters, valves, etc. as needed. Most recently, remote water meter readers have been installed.

Storage in the Main Service area is provided by the South Burlington West Tanks, a twin set of 0.5 million gallon welded steel storage tanks located to the north of Allen Road. Water storage for the High Service area occurs in a 2.1 million gallon tank

located on Dorset Street, known as the South Burlington East tank. A 2003 planning study evaluated tank sites and recommended improvements for future water storage and distribution system expansion, a number of which have since been implemented. This study is regularly assessed in relation to new development and demands on the infrastructure.

South Burlington Water Department and Champlain Water District. The City's Water Department was established in 1935 when South Burlington entered into an agreement with the City of Burlington to extend public water along Shelburne and Williston Roads. As South Burlington grew, fire districts were organized to supply water to the developing neighborhoods. The districts have ceased operations and been consolidated into the South Burlington Water Department except for Fire District #1 (Queen City Park).

Since 1978, the City has contracted with the Champlain Water District (CWD) to provide management, administration and operational services for the City's water distribution system. The City Council sets the water rate for South Burlington water consumers and the Water Department bills customers for water usage, based on meter readings. Connections to the City water system are covered by municipal ordinance.

CWD, a regional water supplier serving 12 municipal water systems, provides potable water to the City of South Burlington water distribution system. CWD obtains water from a deep-water source in Lake Champlain's Shelburne Bay. A second line was recently placed into service to provide redundancy and avoid disruptions in supply. Total water usage for CWD members has declined during the past decade, due largely to reduced use by large facilities like the Global Foundries (formerly IBM) plant, ensuring an adequate supply of water for the foreseeable future.

The water is treated at the Peter L. Jacob Water Treatment Plant with state of the art filtration, disinfection and corrosion control to provide for safe and high quality drinking water. The treatment facility, located on Queen City Park Road, has a nominal capacity of 20 million gallons per day. CWD assures the safety of the water by monitoring its sanitary quality, source quality, disinfectant-by-product quality and aesthetic quality. CWD also works hard to protect water quality in the Shelburne Bay watershed through its Watershed Management Plan for Source Protection.

Fire District #1. South Burlington Fire District #1 supplies potable water to approximately 80 households in Queen City Park. The water source is a deep rock well and the district has an independent storage tank. Fire service to the Queen City Park area is from a dedicated fire line served from the South Burlington Main Service transmission main.

Analysis and Challenges

The key challenge for services such as water supply is to ensure high quality services are maintained at reasonable costs to the users. In South Burlington, substantial

portions of the infrastructure are beginning to reach replacement age, notably in the neighborhoods built from the 1940s through 1960s.

In older neighborhoods, relatively compact housing has allowed for greater efficiencies of costs than in some other portions of the City that have been developed in a less compact manner.

Expansion of the present system must be completed in a manner that does not decrease water pressure levels below minimum fire and residential standards.

Future Needs and Trends

The availability of municipal water has been a significant factor enabling housing development, particularly in the SEQ. Facilities planning for both systems has incorporated and considered both the demand for new housing and the City's conservation goals in determining how much capacity is required to serve the long-term needs in this district, as well as in helping to determine where extensions of service lines are and are not appropriate.

The water system serving the SEQ underwent a major upgrade in 2004-2005, following a successful bond vote in May 2004. The water main on Dorset Street was upgraded and "looped" through the City right-of-way along Old Cross Road to improve storage, pressure, and fire fighting capacity. The Dorset Street water storage tank was raised by 35 feet to provide greater water pressure and fire protection capacity for the SEQ. Finally, a "twin" water tank was built by the existing Allen Road tank, providing improved storage, fire protection and pressure to the service area along Spear Street. This complex project received the 2004 Grand Award for Engineering Excellence from the Vermont Chapter of the American Council of Consulting Engineers, recognizing the creative work of the South Burlington Water Department and Forcier Aldrich & Associates, the project's engineers.

The one remaining water infrastructure item for the SEQ is to secure a water tank site on a high point in the Southeast Quadrant, intended to serve the City's 20- to 25-year pressure and storage needs. This should be studied further and added to the Official Map. The City's infrastructure management plan predicts when water supply systems will need to be upgraded or replaced. It will remain important to review these plans against future development trends to ensure the system's capacity is not overburdened.

The City's water supply ordinance has set aside 50,000 gallons per day for the future City Center area. It is estimated that upon final building, this will represent only one-quarter of the overall need. The City should continue to work with the Champlain Water District to assure that sufficient water supply infrastructure is installed to meet future needs.

The principal challenge for the future will be the maintenance and replacement of the water supply system.

D. Wastewater Treatment

Overview

Key issues and needs related to the City's management of wastewater identified in this plan include:

- Provision of safe wastewater treatment supply at reasonable costs.
- Maintenance of aging collection and pumping system.

Inventory

South Burlington is served by two wastewater treatment facilities: Airport Parkway and Bartlett Bay. The service areas for each of the City's wastewater treatment facilities are presented on the enclosed map, *Sanitary and Water Systems*.

Airport Parkway, the City's largest treatment facility, serves approximately 75 % of South Burlington households and businesses. The Airport Parkway plant discharges to the Winooski River. The Airport Parkway plant was upgraded in 2012, increasing capacity from 2.3 to 3.3 million gallons per day. As part of this project, the treatment process was upgraded to maintain or reduce the amount of pollutants discharged while accommodating increased flows. Approval for this upgrade at the state level included a determination that the City's City Center, SEQ, and other land use plans were consistent with state wastewater and growth policies.

While owned by South Burlington, the City has an intermunicipal agreement that allocates 1.0 million gallons per day of treatment capacity (of the 3.3 million gallons per day total) to Colchester Fire District #1. Currently, the facility has actual flows of approximately 2.0 million gallons per day. It is anticipated that these upgrades will meet with needs for City Center and other development in the community for the foreseeable future.

The wastewater facility at Bartlett Bay presently serves about 25 % of South Burlington households businesses as well as the Magic Hat Brewing Company. This facility was last upgraded in 1999 and has a permitted capacity of 1.25 million gallons per day. Flows at Bartlett Bay are approximately 0.7 million gallons per day. The City is presently evaluating the diversion of the Eastwoods Area sewer system connected to the City of Burlington treatment plant, to the Bartlett Bay facility.

The wastewater collection system in South Burlington is comprised of a mix of public and private pump stations that feed a network of public pipes.

Future sewer main construction will be primarily by private developers. Future main extensions can be allowed beyond the basic service areas only if appropriate improvements to the existing network are made.

A small number of City homeowners rely on soil-based septic systems to treat wastewater. Less than five percent of City residents have on-site septic disposal

systems, a majority of which are located in the Southeast Quadrant and predate recent extensions of infrastructure to this part of the City.

Analysis and Challenges

At various times, the City has been in a position of significant scarcity of treatment capacity at one of its wastewater treatments plants. In the late-1990s, new allocations to the Bartlett Bay facility were only able to be granted upon close scrutiny of flows.

The City's water supply and wastewater ordinance has set aside 150,000 gallons per day for the City Center area. This is anticipated to meet a substantial portion of the need for the foreseeable future growth without unreasonably over-committing to one geographic area within the City's core areas. The recent upgrade to the facility was critical in the City's receipt of a New Town Center designation from the Vermont Downtown Board in 2010 and played an equally important role in the designation of Severance Corners in Colchester as a Growth Center in 2009.

External factors play an increasingly significant role in planning for future sewage disposal. Discharge of treated effluent from the Bartlett Bay plant into Lake Champlain and into the Winooski River from the Airport Parkway plant is governed by state discharge permits and the federally mandated Lake Champlain TMDL (total maximum daily load) for phosphorus. Assignment of a water quality designation by the state limits the quantity and quality of the effluent the City may discharge.

Shelburne Bay, which assimilates waste from the Bartlett Bay treatment plant (and Town of Shelburne), is the raw water source for the Champlain Water District. The Winooski River is relied upon by abutting communities for sewage plant outfall. Because of state-imposed water quality standards for the Winooski River, it has become apparent the assimilative capacity of the river is limited. However, this limit may be exceeded by the demands of the communities bordering it. The City must continue to actively and diligently participate in the waste-load allocation plan for the lower Winooski River.

The system of private and public pump stations and feeder lines presents challenges for system maintenance at times. The City has encouraged development to use public standards for construction.

Future Needs and Trends

As with all public infrastructure, the need to maintain facilities at a reasonable cost is paramount. With the completion of the Airport Parkway Treatment Plant upgrade, capacity needs in the City should be met for the next decade and beyond. The Bartlett Bay facility will have need for equipment upgrades in the near future however, and presents an opportunity for the City to gain substantial energy savings with the use of the newer technologies being employed at Airport Parkway and elsewhere.

The City's capital budget and plan can estimate time frames for renovations and needed line and pump station upgrades. A capital plan that is reviewed regularly can also project time frames for future capacity needs and establish a financial mechanism in advance.

The City has recognized that there are certain planned conservation areas where the installation of sewer lines is not an appropriate investment. Sewer lines are not recommended for extension in or through any of the Primary Natural Communities identified in the Arrowwood Assessment, in "The Bowl" area identified for future conservation. The limited number of housing units and low densities planned for this area can be served by on-site septic systems if development occurs.

The Sanitary and Water Systems Map shows specific pump stations and force mains that should be upgraded in order to provide better service to existing and planned development areas in the SEQ. These improvements and upgrades, which have been incorporated into the facilities plan for upgrading the Airport Parkway Wastewater Treatment Facility, are consistent with the planning principles and goals for the SEQ and should be completed.

Potable water & Wastewater Objectives

Objective 29. Maintain a wastewater allocation system that reflects the land use goals of the Comprehensive Plan.

Potable water & Wastewater Strategies

Strategy 65. Plan for infrastructure such that its location will limit disturbance within identified primary and secondary natural areas throughout the City to the greatest extent possible.

Strategy 66. Secure a water tank site on a high point in the Southeast Quadrant to serve the City's 20- to 25-year pressure and storage needs. This should be added to the Official Map, and incorporated into any development plans for the area.

2.5. Green Infrastructure

The City of South Burlington's open spaces, parks, natural systems and cultural resources combine to create a "green" network throughout the community. Similar to the network of roads, paths, sidewalks, and utilities that make up the City's "grey" infrastructure, and the rivers, wetlands, and water systems that make up the City's "blue" infrastructure, these "green" elements provide a network that identifies and preserves the significant ecological, wildlife and cultural resources that contribute to the character of the City.

From public parks and wildlife habitats to farmland and historic buildings, the natural and cultural resources that make up the City's green infrastructure play an important role in the future development of the community. Through green infrastructure planning, priority resource areas can be identified and linked to create recreational and open space systems as well as valuable corridors for wildlife.

A. Ecological Resources

The ecological resources of South Burlington are widely varied for a community of its size located in the heart of the Champlain Valley. Prominent water features, including Lake Champlain, the Winooski River, Potash Brook, Centennial Brook, and Muddy Brook serve as important wildlife travel corridors and political boundaries (these aquatic resources are discussed in greater detail in the Blue Infrastructure section of this plan). Geological features ranging from lakeside cliffs to sandy soils play an important role in shaping the vegetation as well as development patterns in the area.

This chapter includes an inventory, analysis, and overall policy strategy of the natural resources and publicly-owned natural areas of the City. This chapter is supplemented by the discussions and analyses within the land use section of this plan. It is further supplemented by the myriad of existing and planned open space, natural area, water quality, and wildlife conservation plans and studies prepared by or for the City.

Overview

Key issues and needs related to the City's ecological resources identified in this plan include:

- The City has retained a number of important natural areas that provide multiple benefits to City residents including recreational opportunities, wildlife habitat, groundwater recharge, storm and flood water storage, etc. However, the City lacks a well-defined, coordinated, City-wide open space plan to ensure protection of ecological resources and improved environmental quality as the City continues to grow and develop.

- The Champlain Valley is among the most fertile regions in Vermont, creating opportunities for both agriculture and development.
- Chittenden County presently meets federal air quality standards, but has in the past been a non-attainment area and could be so again.

Inventory

The South Burlington Open Space Strategy (2002) includes a overview of land throughout the City with higher ecological value based on compilations and analyses of the various resources described below and in the Blue Infrastructure section of this plan. The Southeast Quadrant (SEQ) Open Space Master Plan Map (2005) includes specific recommendations for properties that should be conserved. The South Burlington Open Space Report (2014) includes a significant number of recommendations ranging from potential scenic view protection areas, a park gap analysis, and mapped primary and secondary resource conservation areas. Land cover, bio-diversity, and working lands are also mapped in this report.

Climate. South Burlington's northerly latitude assures a variety of weather and a vigorous, cool climate. The average annual temperature is 46 degrees, the average summer temperature is 65 degrees. The average annual frost-free growing season of 145 days is largely due to the moderating influence of Lake Champlain. South Burlington is one of the cloudiest areas in the U.S. with an average of 199 cloudy days a year. Precipitation is well distributed throughout the year and averages 37 inches annually in the form of rain and 81 inches annually in the form of snow. Winds are predominantly north-south in direction paralleling the Champlain Valley. Winds of damaging force are rare and occur mostly as thunderstorms.

The climate of the area is documented in the UVM Agricultural Experiment Station publication, *Climate of Burlington, Vermont*. The severity and duration of the winter shortens the construction season. The growing season varies somewhat depending upon the crop, but is generally considered to range from mid-April through late-October.

Careful design and construction of foundations, utility lines, and roadways become necessary to minimize damage from frost heaving and icing. As learned from the ice storm of January 1998, undergrounding of utilities is important.

Air Quality. Air quality in Chittenden County currently meets all basic federal health (attainment) criteria. For some measurements however - notably ozone and particulate dust from local and national sources - ongoing monitoring is necessary. The primary sources of airborne pollutants include automobiles and trucks, industry, and residential/commercial heating.

Air quality is not a new concern in Chittenden County. During the 1970s and much of the 1980s, air quality in the county did not meet the National Ambient Air Quality Standards. Since 1987, air quality in Chittenden County – and all of Vermont – has met these standards. Air quality monitoring confirms that Chittenden County's air quality still meets the national standards, but ozone levels are close to the current

national standard and fine particle pollution (PM) has approached the standard in recent years.

Keeping our Air Clean, a report released by the Chittenden County Regional Planning Commission in 2009, highlights the primary sources of air pollution in the region and presents a series of individual, local, and regional recommendations to maintain and improve our local air quality.

In May 2009, the City of South Burlington's Energy Committee completed an assessment of energy use throughout the community. The assessment revealed transportation to be the greatest single source of energy use in the City. With nearly all vehicles fueled by gasoline and diesel in the City, it is also a significant contributor to airborne pollutants.

Topography. South Burlington's landscape is lined by a series of ridgelines and river valleys and punctuated by cliffs along parts of Lake Champlain and the Winooski River. Elevations range from a low of 95 feet above sea level along the shorelines of Lake Champlain to a peak of 473 feet along a ridgeline in the City's Southeast Quadrant. Five prominent north-south ridgelines shape the City's landscape and play an important role in the historic transportation, settlement, and wildlife transit patterns of the community:

- Along the west side of Spear Street, from Swift Street into the town of Shelburne;
- Along the east side of Dorset Street, from Swift Street into the town of Shelburne with a gap in the vicinity of Cider Mill Drive;
- Along Hinesburg Road south of Interstate 89 into the Town of Shelburne;
- Between Spear Street and Dorset Street, extending southward from Swift Street a short distance; and
- Along Old Farm Road from Kimball Ave to Hinesburg Road.

The high points of these ridgelines reveal in many cases spectacular views of the Green and/or Adirondack Mountains in the distance. Some have been incorporated into the City's Land Development Regulations as scenic view overlay districts.

North of these ridge systems is a flat, well-drained deltaic deposit. This flat area is drained by a network of drainage ways towards Potash Brook to the south and tributaries of the Winooski River to the north. Burlington International Airport is located in this area. Two other distinctive flat areas are found in the Southeast Quadrant. The smaller area is located to the east of Butler Farms. It contains a large wetland which is the source of Potash Brook. The larger area is located to the east of Spear Street. This area has a large wetland in its geographic center that drains into Shelburne Pond, a designated natural area. Floodplains and wetlands are found in the lowlands near rivers, streams and drainage ways in association with the Winooski River, Potash Brook, Muddy Brook and their tributaries.

Bedrock Geology. Much of the Winooski and Champlain valleys' geologic formations were the result of glaciation. When the ice receded, Lake Vermont was formed which extended from the Lake Champlain basin to the foothills of the Green Mountains. The resulting valleys are covered with glacial drift and lake sediments. The significant bedrock geology lying near to the surface in South Burlington is located in the western portion of the City extending along the Lake Champlain shoreline. These are primarily limestone/dolomite, calcareous clastic, and meta-sandstone and quartzite.

The bedrock geology of the City relates to planning in many ways. First, shallow depth to bedrock and the presence of bedrock outcrops dictate the location of roads, leach fields, underground utility lines, and building foundations. Second, bedrock aquifers supply many wells in South Burlington. The quantity and quality of this groundwater must be maintained at least as long as citizens rely on private wells for their domestic water supplies. The effects of development on recharge areas as far as natural systems are concerned should also be borne in mind. Land development reduces recharge capability at the surface by increasing impermeable surfaces, such as rooftops and paved areas.

Soils. The Champlain Valley has long been identified as one of the most fertile regions in Vermont. Within this region, most of the soils in South Burlington are classified as prime soils or soils of statewide important for agriculture by the federal Natural Resource Conservation Service (NRCS). They meet the criteria for primary agricultural soils as regulated by the state via Act 250's Criteria 9B and have historically been active farmland. Although much of South Burlington has been developed, there is farmland, especially in the Southeast Quadrant, that remains viable for agricultural production.

The City's soils are mapped in the Chittenden County Soil Survey by the Natural Resource Conservation Service of the United State Department of Agriculture.

Vegetation. Trees, shrubs, and other soil cover are more than aesthetic amenities. They prevent erosion, provide stormwater benefits, improve air quality, provide visual and aural buffers, and furnish shade and protection from wind. Several remaining large wooded tracts are owned by the City or the University of Vermont and are maintained essentially in their natural state (see discussion on forest lands). Remnants of apple orchards and hedgerows along property lines and abandoned town roads are historic reminders of the City's agricultural heritage and past land use patterns.

Forest Lands. Forest lands are an important natural resource. Due to the urban character of the City, forest lands are more important for their recreational, educational, wildlife habitat and aesthetic amenities as opposed to their use for timber production. Trees serve as temperature control, wind breaks and noise baffles, and provide important habitat for various types of birds and wildlife. Therefore, programs and methods to protect these lands should focus on public access and enjoyment, and wildlife preservation.

Several important, publicly accessible, forest land areas are identified in this plan including Red Rocks Park, Centennial Woods, East Woods Natural Area and the Kennedy Drive Natural Area. Additional important forest lands include the forested

ravine area bounded by I-89, Patchen Road and Williston Road, and the 20-acre forested wetland/bog located in the southern end of the City between Spear and Dorset Streets. These forest areas are in private ownership.

Wildlife. South Burlington is home to a wide range of wildlife, from insects and worms, to larger mammals like beaver, fox, coyotes, bobcats, deer, and occasionally moose and bear. Many bird species are also present, including some ground nesting species whose populations have declined in Vermont in recent years due to changing agricultural practices. Residents share the densely populated urban and suburban areas and open spaces with this diverse population of wildlife. People and wildlife share the natural areas throughout the City. Past studies have identified travel routes - or corridors - most often frequented by larger wildlife. These corridors tend to focus on and include resources such as streams, wetlands, bogs, and undeveloped forest blocks.

Natural Areas. Natural areas in South Burlington have been identified by the City and its partners, the University of Vermont, the Vermont Natural Resource Council, the Chittenden County Regional Planning Commission, the Vermont Resources Research Center, and the South Burlington Land Trust.

These natural areas have generally been historically undeveloped, though most of the land in the region was logged and farmed for some portion of its history. Many contain unusual communities of plants and animals, rare species, and exceptional geological features. Two studies, the South Burlington Open Space Strategy (2002) and the Wildlife and Natural Community Assessment of the Southeast Quadrant (2004) document many of the most critical natural areas within the City. Of these, some are publicly owned, others are under private conservation easements, and others are not protected.

A comprehensive listing of natural areas, public and private, can be found in the Community Facilities chapter of this Plan.

Primary and Secondary Conservation Areas. The 2014 Open Space Report classifies natural and scenic open spaces resources identified and considered for protection as "primary" and "secondary" resource conservation areas. This classification forms the basis for many resource protection strategies. They are not assigned based on a national standard, but rather reflect South Burlington's local protection priorities.

Primary conservation areas (Map 7) include environmentally sensitive and hazardous areas that are off limits to development, regardless of their setting or context; and sites that host or support rare, threatened and endangered species.

Secondary Conservation Areas (Map 8) are those other resource areas also identified for conservation or protection, in which limited encroachment may be allowed in accordance with siting and management practices that are intended to avoid, minimize or mitigate the adverse impacts of development.

With these distinctions identified by the community, the City will begin to incorporate them in land use planning.

Analysis and Challenges

The conservation of connected wildlife corridors and individual pieces of land containing unique physical features, together with careful attention to conservation of natural resources on developed properties have become increasingly important as development has continued to take place throughout the City. Whereas in the past, undeveloped areas that were used for active farm and forestry operations provided habitat for wildlife and scenic views for the public, ongoing development pressure throughout Chittenden County has generated the need to actively conserve important open spaces, forested blocks, and connected wildlife habitat areas.

In order to maintain a balance of conserving important ecological resources and allowing for development, City policies will need to consider:

Climate and Climate Change. The region's variable climate places significant burden on natural communities in the area. From a land use perspective, winter climate conditions require adequate snow storage on all properties, and place demands for regular plowing services by the City and other public and private entities. In addition, rainfall must be properly accounted for in order to ensure that stormwater runoff does not lead to declines in water quality or stream bank erosion.

The more global issue of climate change poses significant challenges for all communities, both in how they contribute to the change, and how they respond to it. The City of South Burlington has substantial opportunities to address both by fostering land use patterns, transportation modes and energy strategies that can temper the City's carbon footprint. Goals and strategies related to this issue are found through the plan under relevant chapters.

Geology. The bedrock geology of the City should be closely considered as a part of all development activity.

The effects of development on groundwater recharge areas as far as natural systems are concerned should also be borne in mind. Development reduces recharge capability at the surface by increasing impermeable surfaces, such as rooftops, paved areas and lawns.

Soils. Soils information is particularly germane to the future plans for land use. Much of the area contains soils of statewide importance (with limited areas having prime agricultural soils). Historically these soils have been beneficial to both agricultural operations and development. Today, the presence of these soils provide opportunities for development to be commingled with small-scale agricultural operations, community gardens, and the continued presence of larger scale operations associated with the University of Vermont and historic farms. The geographic nature of the area requires the City to balance small- and mid-sized agricultural opportunities with demands for affordable housing and economic development in the core of Chittenden County. Sandy soils along Shelburne Road and near the airport are well drained but of lesser agricultural quality, while soils in the southeast quadrant tend to include less well drained clay and loam soils.

Air Quality. As the City continues to grow, and especially as the county around us becomes more urbanized, the community must remain an active participant in efforts to maintain or improve air quality conditions. Growth can lead to reductions in air quality, but actions to counterbalance this, as described in the recent Chittenden County Air Quality Plan (2009), can mitigate potential problems and ensure that the region does not become a "non-attainment" area. Land uses and activities with the greatest potential for air quality problems include certain manufacturing uses, quarry operations, congested intersections where vehicle stacking and queuing is substantial, and auto-dependant land uses in general.

Habitat and Vegetation.

- The presence of important ecological resources, as well as steep slopes, shallow soils, and extensive bedrock outcroppings should be incorporated into all types of planning for development and conservation.
- Many of the wildlife corridors within the City begin or extend beyond the City's boundaries, including the Muddy Brook, Shelburne Pond, Winooski River, Centennial Woods, and others. Coordination with neighboring jurisdictions and regional and state entities is critical.
- Effective wildlife habitat areas include travel corridors for foraging, hunting, nesting and drinking.
- Unique and historic natural areas can be open to the public and celebrated if carefully managed. Continued evaluation of these resources will be necessary to determine whether any might need to be "off limits" to the public.
- Conservation of mature and specimen trees is important due to the difficulty of successfully transplanting these trees; this must be balanced with ensuring that conserved natural areas retain a vibrant forest succession to ensure the future health of these areas.
- Maintaining a balanced variety of native plant species and actively removing non-native invasive species will help to support a vibrant system of flora and fauna.
- The planting of street trees can serve to provide a safer and more pleasant pedestrian experience, calm traffic flow, and contribute to urban beauty, air and water quality, and noise reduction. The City must continue to ensure a balance of different tree types to protect from wide-scale disease (such as the dutch elm disease).
- Maintaining and growing a healthy tree canopy has extensive public health, social and even economic benefits, including energy conservation and climate cooling, water filtration, absorption of air pollutants, improved wildlife habitat, recreational enjoyment, aesthetic relief, noise reduction; studies even demonstrate improved mental health of people with exposure to more trees.

Future Needs and Trends

Several population and development trends in South Burlington will shape the City's ecological resources in the coming years.

- **Development Growth**. Housing growth is expected to continue at an average rate of 1.5 to 2.0 % annually. Commercial development is also anticipated to continue at a similar pace. This development will continue to place pressure on existing wildlife habitat areas as well as wildlife travel corridors. This is especially the case in the Southeast Quadrant.

- **Public Demand for Accessible Natural Areas.** Public interest in the acquisition, maintenance and accessibility of natural areas has grown steadily in South Burlington over the past decade. It is anticipated that this interest will continue to grow as development continues to take place in previously unbuilt areas and as public recreational interests grow.

- At a regional scale, as development continues to take place throughout Chittenden County, attention to the need to acquire and maintain habitat corridors for public and wildlife benefit will likely grow.

Additional Resources

- **Underwood Property Vision Framework (2015)**
- **Wheeler Nature Park Management Plan (2015)**
- **South Burlington Open Space Report (2014)**
- **A Report on Existing and Potential Tree Canopy in the City of South Burlington (2014)**
- **Red Rocks Management Plan (2013)**
- **Leduc Farm Landscape: A Natural and Cultural History (May 2009)**
- **Dorset Park Natural Area [now formally the Wheeler Nature Park] Natural Resource Inventory and Management Recommendations (July 2009)**
- **Wildlife and Natural Community Assessment of the Southeast Quadrant (July 2004) & Southeast Quadrant Environmental Resources Map (March 2005)**
- **Southeast Quadrant Open Space Master Plan Map (March 2005)**
- **A Study of Breeding Birds in the Southeast Quadrant (July 2004)**
- **South Burlington Open Space Strategy (April 2002)**

Ecological Objectives

Objective 30. Proactively plan for a network of interconnected and contiguous open spaces to conserve and accommodate ecological resources, active and passive recreation land, civic spaces, scenic views and vistas, forests and productive farmland and primary agricultural soils.

Objective 31. Conserve, restore and enhance biological diversity within the City, through careful site planning and development that is designed to avoid adverse impacts to critical wildlife resources, and that incorporates significant natural areas, communities and wildlife habitats as conserved open space.

Ecological Strategies

Strategy 67. Substantially restrict new subdivision and development from primary resource conservation areas to include hazardous and environmentally sensitive areas identified, mapped and regulated by the City. Minimize the adverse impacts of new subdivision and development, including resource fragmentation and encroachment, within secondary resource conservation areas, to include those resources of state or local significance as indicated on available resource maps, identified in available inventories and studies, and confirmed through site investigation.

Strategy 68. Redefine open space in new developments such that usable, quality open space shall be required. Qualifying open space should include civic spaces, recreation, wildlife habitat, and usable agricultural lands.

Strategy 69. Retain healthy and high-quality existing trees, vegetation, and publicly owned natural areas and woodlands. Develop long-range management plans for each area to foster their continued health and use.

Strategy 70. Encourage public education about tree functions and tree disease inspection in urban areas through cooperation with the UVM Horticultural Farm and Vermont Department of Forest Parks, and Recreation, Urban and Community Forestry Program.

Strategy 71. Maintain the City's wildlife diversity, including making use of available planning and legal tools such as buffers, transfers of development rights, overlay zoning districts, conservation easements and other tools as appropriate.

Strategy 72. Work with adjoining municipalities and regional entities to enact complementary land use policies where wildlife habitat areas cross City boundaries.

Strategy 73. Maintain existing overall tree canopy. Set targets to increase overall tree canopy, with a focus on increasing tree canopy in urban areas and residential property parcels as identified in the *Report on Existing and Potential Tree Canopy in the City of South Burlington (2014).*

Strategy 74. Foster passive recreational use of natural areas and identify areas that may be appropriate for an "off-limits" designation due to their fragile nature.

B. Historic and Cultural Resources

Historic and cultural resources in South Burlington include scenic views, natural areas, historic properties and structures, and growing community amenities provided by local organizations, individuals, and the City.

The City's history has been well documented through annual reports, oral histories, and publications, such as *Look Around So. Burlington Vermont*, *South Burlington Vermont 1865-1965,* and *Know Your Community: South Burlington, Vermont 1865-1977*. These publications provide a strong background of the City's formation from the original City of Burlington and describe the majority of buildings that today would be eligible for the National Register of Historic Places. As the community's first subdivisions and commercial development enter their seventh decade, however, the built environment that is considered historic is growing.

Cultural resources in the community have long been linked to those in neighboring communities, notably Burlington. The resources based in South Burlington have traditionally been scenic views, natural areas, parks, schools, the community library, and places of worship. These have been supplemented for many years by programming offered through various community groups, the City's recreation and parks department, and others.

Overview

Key issues and needs related to the City's historic and cultural resources identified in this plan include:

- Scenic views are among the City's most prominent cultural and historic resources.
- Though somewhat limited in number, historic homes and buildings dating from the 1930s and earlier dot the South Burlington landscape.
- Some of South Burlington's historic resources have not been identified or documented as they were not considered "historic" during the period when statewide inventories of historic resources were compiled (primarily in the 1980s). Key architectural resources that exemplify the City's heritage should be recognized and protected in order to provide future generations of residents a physical connection to the period when South Burlington became a City.

Inventory

Views and Scenic Quality. There are a number of outstanding scenic views offered in South Burlington. From numerous locations in the City, one can see spectacular views of the Green Mountains to the east, and the Adirondacks and Lake Champlain to the west. The preservation of the scenic qualities of the City are critical to understanding its cultural landscape and heritage. Through careful planning, appropriate development design, and through acquisitions and easements, these vistas and viewshed protection zones can be protected for future generations to enjoy.

In the 1990s, vista viewpoints were identified for 17 key locations in South Burlington. Of these, Viewshed Protection Zones are now in existence for six views including from the Nowland Farm Road area, Hinesburg Road- North, Hinesburg Road- South, Spear Street and Allen Road, and Spear Street at Overlook Park.

Additional views, along with an evaluation matrix, were examined and are available in the 2014 Open Space Report.

Historic Sites and Structures. The City of South Burlington has diverse historic resources, including archaeological resources that are not readily visible. Paleoindian archeological sites, landscape features such as stonewalls, historic farmsteads, Craftsman Style bungalows, International Style buildings, post-World War II neighborhoods, and a variety of roadside architecture make up the cultural landscape and history of South Burlington. These cultural resources are visual representations of the City's heritage.

Archaeological sites offer insight into the more distant past when people did not write and provide information about events and activities. South Burlington's pre-contact and historic period archeological sites and historic buildings, structures and landscapes, help constitute its unique and diverse cultural heritage. Once these resources are gone, they can never be replaced. For certain time periods of history, these historic resources may be the only clues to our past.

South Burlington is unique among Vermont communities as a large portion of South Burlington's built environment was created during the years following World War II. While most would not consider the mid-20th century architecture of South Burlington to be historic, many of these sites and structures are historically significant. Those that are at least 50 years old may be eligible for the National Register of Historic Places.

A number of structures in South Burlington date from the 19th century. These include, among others, the Stone House at Van Sicklen Road and the Wheeler House at Swift and Dorset Streets.

Cultural Facilities and Organizations. Cultural facilities in South Burlington include a combination of public and private sector venues, including the City-owned O'Brien Center at Jaycee Park. The Recreation and Parks Department manages this facility and offers a range of community recreational activities and programming year-round. Cultural organizations in the City include places of worship, service organizations and community groups. In many cases, organizations offering cultural programming in the area are regionally, rather than locally, based. The development of a community center would provide a much needed space for cultural organizations to gather.

Analysis and Challenges

Historic Sites and Structures. Care must be taken to appreciate South Burlington's cultural landscape as a record of the City's evolution from an agricultural to a booming post-war suburban community. A variety of components that make up South Burlington's cultural landscape must be preserved in order to preserve elements of

the City's history. As the City develops, care should be taken to make development sensitive to the City's historic and archaeological sites and structures. Destroying historic resources can sometimes permanently destroy opportunities to interpret and understand our history. As South Burlington continues to develop, the historic resources that represent the City's past should be recognized and preserved as we plan for its future.

Heritage Landscapes. Nestled within the Champlain Valley, South Burlington's agricultural landscape is a critical part of the City's cultural heritage. The remaining farmsteads and farmland, particularly in the Southeast Quadrant, represent the historical development patterns of the community and reflect its strong agrarian past. Whether remaining in active production or becoming conserved areas, these landscapes can become important cultural links in an open space network.

Cultural Facilities and Organizations. The diverse geography of South Burlington and proximity to Burlington and other historic communities have historically made the presence and operation of cultural facilities and community-wide cultural organizations a challenge. The construction of the recreation path network has begun to sew the City's diverse and well-established neighborhoods together with its commercial areas and parks.

Scenic Viewsheds. The City has identified a series of scenic viewpoints and established scenic view overlay districts in the Southeast Quadrant. Opportunities exist for additional overlay districts to be established elsewhere in the community and should be explored.

Future Needs and Trends

Ongoing development will place pressure on historic structures and properties to be renovated or replaced. Until recently, very few building in South Burlington would be considered "historic," as much of initial development in the community took place beginning in the 1940s. As greater numbers of structures reach 50 years of age, some buildings or neighborhoods may become eligible for designation on the State or National Register of Historic Places.

Historic & Cultural Resource Objectives

Objective 32. Protect important vistas and viewsheds, as viewed from public vantage points (public roads, paths, land); and designated landscapes, sites and structures of historic and cultural significance.

Historic & Cultural Resource Strategies

Strategy 75. Using the data and process identified in the 2014 South Burlington Open Space study, establish view protection overlay districts in additional areas of the City and encourage designs that are visually harmonious with the natural landscape in view protection districts.

Strategy 76. Use the state Register of Historic Places listing for the City to help assess the significance of historic buildings, structures and landscapes, and consider listing roadside architecture and post-World War II construction as historic properties.

Strategy 77. Pursue an inventory of the City's historic resources and consider regulatory tools that would require documentation of significant and identified historic or archeological resources before permitting their destruction.

Strategy 78. Participate in appropriate reviews such as Act 250 or highway corridor hearings to protect important historical and cultural resources which may be threatened.

C. Recreation Resources

The City of South Burlington is home to an array of recreational facilities and programming. It is in part due to this that the City was named "Best Sports Town in Vermont" by *Sports Illustrated* in 2007. The challenge for the City - and community - is to balance the need for recreational facilities (developed and natural) with other uses of land, and to provide cost-effective services to residents of all ages, interests, and abilities.

Overview

Key issues and needs related to the City's cultural resources identified in this plan include:

- The City has a number of developed parks, but they are heavily used and not equally geographically distributed.
- Growing interest in undeveloped, natural recreation areas has provided new opportunities and additional acquisition and maintenance demands on the City and other local and regional partners.
- Recreational programming remains extremely popular and must regularly adapt to changing demographics within the community.
- Recreation & Parks operates under three main pillars: Conservation, Health & Wellness, and Social Equity.

Inventory

Recreational Facilities. The City of South Burlington Recreation and Parks Department offers diverse leisure time and recreational opportunities in a variety of settings. A comprehensive listing of parks, public and private, can be found in the Community Facilities chapter of this Plan.

Funding. The City has used a number of strategies to acquire and upgrade both developed parks and City natural areas. In past years, South Burlington has taken great advantage of the federal Land and Water Conservation Fund. More recently, in 2000, City voters approved a special dedicated property tax of 1 cent to purchase open space or development rights to open space. The tax yielded approximately $270,000 in FY216 and is anticipated to grow commensurate with the grand list each year. In 2010, the use of these funds was expanded to allow for up to five percent of the annual funds to be used for maintenance of open space.

Another implementation measure used to acquire parkland is through the assessment of recreation impact fees on new development. The City adopted its Impact Fee Ordinance, which includes recreation fees, in 1995. The payment of an impact fee is preferred where it is not practical to dedicate a park site due to the size, density or location of a proposed subdivision. There is a strict requirement as to how this money can be spent and there is also a time limit as to how it can be spent.

A third strategy has been the requirement of dedication of public park space alongside larger development projects via the Land Development Regulations.

Recreation Programming. Recreation programs are fundamental to the quality of life of people, our community, and society as a whole. Quality of life for people and the community can encompass a number of factors. Among those factors are individual, community, environmental, and economic benefits.

The mission statement for the City's recreation and parks department is reflected in the wide-range of programming opportunities offered: "To enhance the quality of life for all citizens of our community by providing meaningful and fulfilling leisure time activities, recognizing that each person is an individual with their own needs, abilities, and goals to be met during their leisure time."

The City's comprehensive list of recreation programs range in age from pre-school to senior citizens' activities. There are currently 377 various programs offered in a number of major groups including: youth programs, family activities, special events, adult programs, camp programs, junior programs, and senior programs. In addition, the City works with area community groups, nonprofits, neighboring municipalities, and the school district to coordinate and enhance programming available to the City's residents.

To a large extent, public school facilities house the vast majority of indoor programs, while the City's recreation fields and parks provide the majority of the outdoor programming space.

Analysis and Challenges

Recreation Facility Planning. The rate, location, and type of new residential construction present a variety of considerations for recreation planning. The national goal of 7.5 acres of developed recreation land per 1,000 population has been endorsed by the Recreation and Leisure Arts Committee and Recreation and Parks Department. In South Burlington, residential development over the past decade has brought the City from being well above this target to close or slightly below. In addition, the distribution of community and neighborhood parks, while generally widespread, does not provide for easy pedestrian access for all residents.

Maintenance and Safety. As the public path and park systems continue to grow, maintenance and safety are becoming increasingly important issues for the City to address. Maintenance is primarily the responsibility of the DPW's Parks Division, supplemented by occasional volunteer efforts. Staff repairs, paves, paints, landscapes, sweeps, mows, and plows the City's paths and parks as necessary and those costs are part of the City's Public Works' budget. It will be important for the City to retain a regular upkeep and revitalization plan for its recreational facilities.

Recreation Programming. The Recreation and Parks Department offers a wide array of programs, including sports, art, hobby, and educational programs, play groups and fitness, and serves community members from pre-school to seniors. In 2012 more

than 420 programs were offered, in various City, school, or privately owned facilities. A major obstacle that the department faces is that there is very limited space assigned only to these programs.

The Recreation and Parks Department is largely dependent on availability of spaces within the schools to offer the majority of its programs. It receives the second highest priority for the use of school spaces, next to school activities themselves. While this partnership is successful on many levels, there are still direct costs involved, lack of control in scheduling the spaces themselves, and with the length of a regular school day, these spaces are limiting in providing recreational activities for preschoolers and the elderly, both significant needs that currently exist in our community. Alternative building space to provide for these types of activities is essential.

There remains an additional need for outdoor playing fields as well. Over the years, many traditional sports programs have transitioned into three-season sports placing a huge demand on facility spaces. In addition, many spaces are used for multi-sports events. Since there are limited designated field areas, additional playing spaces have developed out of necessity, and do not provide adequate space for the demand. Additional City parkland is needed to adequately provide facility space for various youth and adult sports programs

Future Trends and Needs

As our population demographics continue to shift, so do our facility and programming needs. Trends show an aging population that has strong interests in lower-impact recreation. Trends from the past two decades also indicate continued strong and growing interest in youth developed recreation facilities; there is an identified lack of lacrosse and soccer fields. The City will need to balance needs for open space and developed and passive recreation space and balance new facilities and expected level of service with an ability to provide such services.

Recreation Objectives

Objective 33. Provide for the varied recreational needs and interests of its citizens by providing areas and facilities for passive recreation, active sports, cultural and educational programs, and civic gatherings.

Objective 34. Provide public access to natural areas within the City's more urban and suburban neighborhoods, for passive outdoor recreation and education.

Objective 35. Use the strategies in this plan to maintain the targeted ratio of open space to population/ level of service standards as outlined in the South Burlington Open Space Report (2014).

Recreation Strategies

Strategy 79. Refine and implement acquisition criteria and evaluation of land for the highest community need.

Strategy 80. Integrate additional public parks into the recreational system to reflect National Recreation and Parks Association Level of Service Standards (LOS); create sufficient active recreation fields to enable restoration and maintenance.

Strategy 81. Work with private developers to integrate open space and neighborhood parks into planned development.

Strategy 82. Increase accessibility in parks, such that they may be enjoyed by all residents regardless of age, interest, and physical ability consistent with the proposed use of a recreation parcel and activity. Regularly evaluate and modify programming based on changing demographics.

Strategy 83. Work towards providing access to a park or qualifying open space area within a one-mile safe walk from each neighborhood in the City, and provide each neighborhood with a small park, mini-park, neighborhood park, community green or meeting area. Utilize *Gap Analysis* map from 2014 Open Space Report to identify needs for neighborhood parks.

Strategy 84. Seek opportunities to establish additional public access and parkland along Lake Champlain.

Strategy 85. Establish a public recreation path along Lake Champlain.

D. Agricultural Resources

Agricultural activity in the City has a long and evolving history. Evidence of spear tips and other archeological artifacts indicate settlement and probable small-scale agricultural activity for centuries prior to the establishment of permanent settlements in the late 18th century. From that point forward, many farms were established in the community, focused on the products that were typical of the Champlain Valley: sheep, dairy cows, grains, etc.

As substantial development began to occur in the community in the 1940s, the number and scale of farms began to decline. South Burlington today continues to have an agricultural presence, but it is one that is physically and economically very different from the past.

This chapter includes an inventory, analysis, and overall policy strategy of the agricultural resources within the City. This chapter is supplemented by the discussions and analyses within the land use chapters of the plan.

Overview and Inventory

The City of South Burlington is a largely urbanized community with only a small number of traditional farm parcels remaining. In recent years, however, new forms of agriculture, from small vegetable farms to backyard gardens and farmers markets, have emerged and started to become a significant part of the City's landscape and economic and cultural base. Existing agricultural resources in the City include:

- **Large-Scale Farms and Support Fields.** The City is home to a small number of large agricultural or hay field parcels dispersed throughout the City. Those include the dairy, hay, and corn fields owned and operated by the University of Vermont adjacent to Spear Street, a dairy farm operation at the extreme northern end of the City, the University of Vermont's Horticultural Farm off Shelburne Road, and farm and hay fields along Old Farm Road, Hinesburg Road, and Cheesefactory Road.

  Most of these, with the exception of the UVM lands and Belter Farm off Ethan Allen Drive, have reverted from active farm operation to minimal use as hay fields over the past generation. The City did, however, became host to a new operation in 2009, with the conservation of the former Leduc parcel and the establishment of the Bread and Butter Farm on approximately 140-acres split between Shelburne and South Burlington along Cheese Factory Road. This new farm includes beef, vegetable production, and an on-farm bakery.

- **Small-Scale Farms and Orchards.** A handful of smaller-scale agricultural operations are spread throughout the City. These operations are typically part-time work for those who operate them and vary in the products they offer. They are a relatively new addition to the South Burlington agricultural landscape. Of note are a small handful of "backyard" farms operated by

homeowners and a small farm that has been integrated into the South Village development as a part of its overall mission of sustainability.

- **Community Gardens.** At present, there are two sets of public community gardens in the City; one on land owned by the University of Vermont at the corner of Swift and Spear Streets, the other which is owned and operated at the Wheeler Nature Park Homestead on Dorset Street. Both of these have waiting lists.

- **Farmers Markets.** In 2010, the City Council passed an ordinance formally allowing for privately operated farmers markets to exist. In response, after a trial run, a private retailer in the City operated a biweekly market throughout the 2010 growing season. It remains successful and is currently operated weekly from spring through fall, and managed by the nonprofit group, Common Roots. The market has included more than 40 vendors, including a handful of operations based here in South Burlington.

- **CSA Drop-Off / Pick-Ups.** CSA's are a response to growing demands for community-supported agriculture programs in the region, wherein households pre-pay for farm products from local growers and receive regular deliveries. These programs are so popular that in addition to nearby farms, several farmers in northern Vermont have established local drop-off points in the community. These sites allow for the producers to have centralized distribution and for households to have convenient pick up locations.

- **Private Gardens.** There appears to be a growing trend within the City for households to use garden space for growing fruits and vegetables. Much of the soil in South Burlington is well suited to growing vegetables. In 2010, with an update in 2015, the South Burlington City Council also passed an ordinance allowing for the keeping of chickens in residential back yards.

- **Nonprofit Organizations, Vermont Fresh Network and Local Retailers.** In recent years, the interest in local agricultural systems has grown substantially. This has been reflected in South Burlington by the establishment of nonprofit community groups such as Common Roots, which is dedicated to teaching school children how to grow food and prepare food and make healthy food choices, as well as in the in for-profit community. An increasing number of local retailers are carrying Vermont-made products to meet consumer demand, including some products that are produced or headquartered in South Burlington. In addition, a handful of area restaurants are members of the Vermont Fresh Network of business committed to buying locally-produced fresh foods whenever possible.

- Changing forms of agriculture for the future include: agroforestry, edible forest gardens, permaculture design, and rotational grazing.

Analysis and Challenges

The role of agriculture in Vermont, and particularly in larger communities such as South Burlington, is evolving extremely quickly. Not long ago farming and agriculture

were considered to have a limited role in the City's future, with the continued operation of a handful of historic farms but little else. Growing public interest in local goods has shifted this trend and resulted in the establishment of several new farms, CSA drop-offs, and a farmers market in recent years. The State of Vermont in its Farm to Plate Strategic Plan has stated: "Ongoing conservation efforts, especially for prime agricultural farmland, are essential to the future viability of farming in the State.... zoning ordinances, town and regional plans, and statewide planning legislation must be reviewed and adapted to encourage local agriculture and food distribution."

Several opportunities and challenges present themselves with this increased interest in local food production. Among them:

- **High Cost of Land.** The high value of land in South Burlington is among the principal reasons for the decline in large-scale farming operations in the community over time. These same financial circumstances place pressure on smaller operations as well, but could be somewhat be mitigated against through site planning, as in the instance of the South Village community. Land use planning tools including the use of Transferable Development Rights in the Southeast Quadrant may help conserve existing farmland by clustering development and designating agricultural land as non-developable.

- **Agricultural-Residential Interface.** Vermont law provides for significant protection for farming activities in the state. In some cases, conflicts can arise between agricultural operations and residential activities, including odor, hours of operations, and deliveries. In South Burlington, the limited scale of agriculture over the past generation has led to relatively few conflicts. These issues are beginning to reappear, however, as some residents express interest in the small-scale keeping of animals and/or sale of products from farm stands. The City will need to continue to monitor this relationship, striving for harmony.

- **Shortage of Community Gardens.** Existing community garden space in South Burlington is limited and has significant waiting lists. The existing gardens are located in the Southeast Quadrant. At present, there is no municipal mechanism for the creation or management of new gardens in the community.

- **Permanence of the Farmers Market.** The majority of farmers markets in Vermont are hosted on municipal land by municipal entities or non-profit organizations under license from the municipality. The recently initiated South Burlington Market is managed entirely by the private sector (Common Roots) upon receipt of a permit from the City. The future existence of this market is dependent upon interest from the private sector to continue this operation and the availability of private open land for its operation. The City may want to explore the possibility of a stronger role and/or partnership in the operations in the future.

Future Trends and Needs

Regional and national trends suggest that small-scale, locally produced agriculture will continue to increase in popularity in the coming years. With this will likely be continued interest in identifying ways in which South Burlington residents and businesses will have access to local foods. The City will need to continue to evolve and adapt to these community interests, balancing the positive and negative impacts for its residents.

Additional Resources

- **South Burlington Sustainable Agriculture / Food Security Final Report (2013)**

Agriculture Objectives

Objective 36. Conserve productive farmland and primary agricultural soils within the City.

Objective 37. Support farmers and entrepreneurs within the City who produce food for local consumption.

Objective 38. Enable, encourage, and incentivize agriculture and local food production dispersed throughout the City.

Agriculture Strategies

Strategy 86. Facilitate local farmers' ability to sell and process their products within the City and use the Land Development Regulations to incentivize urban agriculture and local food production in the City.

Strategy 87. Where appropriate, actively use City-owned land for agricultural education, and for urban agriculture and local food production including community gardens and leasing of land to commercial farmers.

Strategy 88. Encourage new development, particularly residential or mixed-use projects that include homes without private yards, to create community garden space.

Strategy 89. Distribute community gardens throughout the City so that gardens are within walking or biking distance for all City residents.

Strategy 90. Explore state law related to the regulation of small livestock and bees, with the goal of increasing participation.

Strategy 91. Encourage more value-added food processors who can strengthen and benefit from the quality of the Vermont brand to locate in South Burlington and bring more quality jobs to the city.

2.6. Achievements & Ongoing Actions

The City has a proud history of not only crafting thoughtful Comprehensive Plans, but implementing them throughout the planning period and beyond. What was a vision yesterday is a reality today. These important elements are in progress, and many are even self-sustaining. However, the importance of these goals should not be lost, nor should the ongoing actions associated with them be halted. As such, this section is included to retain them, keep sight of them, and honor their achievements.

General

- Continue to refine the City's Land Development Regulations to promote the Plan's goals and objectives.
- Continue to collaborate with the South Burlington School District in master planning efforts and work together to regularly assess community facility needs.
- Continue to provide a K-12 educational system allows students to meet or exceed state and national targets for attainment.
- Continue to work collaboratively with the University of Vermont in master planning efforts.
- Continue to cooperate with the towns of Williston and Shelburne to plan compatible uses and densities along town boundary lines.
- Continue to monitor municipal functions, including water and wastewater facilities, government operations, andschool activities, to be cost and energy efficient.
- Continue to make efficent use of boards and committees while continuing to proactively and robustly solicit feedback from all community stakeholders.

Social Infrastructure

- Continue to regularly update the City's All Hazards Mitigation Plan and Emergency Response Plan.
- Continue a policy of community policing, a partnership program that relies on ongoing commitment from all involved to establish and maintain partnerships with the community and limit the underlying causes of crime.
- Maintain adequate staffing and training levels for first response departments within the City of South Burlington and continue to develop mutual aid relationships.
- Continue to build and reinforce diverse, walkable neighborhoods that offer a good quality of life by designing and locating new and renovated housing in a context-sensitive manner.
- Continue to support affordable, elderly and/or higher-density housing to be located near schools, parks, shopping centers, employment centers, day care facilities, transportation corridors, emergency services, and public transportation.

- Continue to provide a range of residential zoning densities throughout the City in accordance with the Land Use chapter of this plan to allow for continued construction of new housing to meet the needs of the region's changing demographics, including at least some districts that foster high-density housing and some that foster affordable moderately-priced single-family housing.
- Continue to partner with regional housing providers to develop new affordable housing and continue to expand the range of housing options available at all price and rent levels in South Burlington.
- Continue to encourage and consider incentivizing neighborhoods that use a mix of housing types and integrate different types next to each other, rather than creating monoculture of one type of housing.

Gray Infrastructure

- Continue the City's membership in CCTA to provide continued bus service in and through South Burlington, and ensure that timely routes and related infrastructure are available to meet the needs of changing populations. Service should be concentrated in and link areas of densest development, while still serving populations with highest needs.
- Continue to upgrade city-owned lighting to energy efficient and low maintenance LED lighting.
- Continue to implement a complete streets policy that contemplates sidewalks, crosswalks, crossing signals, bicycle paths, and bicycle lanes as appropriate in funding applications for new roads and roadway improvements.
- Continue to partner with private property owners to construct and maintain stormwater treatment facilities for existing impervious area.
- Continue to maintain the City's existing transportation system through ongoing, strategic investment.
- Continue to develop infrastructure (largely communications) to allow more people to work from home.

Blue Infrastructure

- Continue managing stormwater runoff to reduce the effects of both erosion and pollution in reference to the Environmental Protection Agency's total maximum daily loads (TMDLs).
- Continue water system design and improvement planning that would result in improved fire protection flows and water supply.
- Continue to require construction and inspect new water lines at standards that will ensure low long-term maintenance costs and the reduction of non-revenue water loss.
- Continue to work with landowners through the development review process to implement the infrastructure plan for the City's water supply and wastewater system.
- Continue to enforce the floodplain regulations to protect floodprone areas and minimize fluvial erosion.

- Continue to annually certify the Emergency Operations Plan.
- Continue to review the Hazard Mitigation Plan on a regular basis and follow-up on action steps.
- Continue to comply with Federal Stormwater permits mandating water quality improvements. Ensure such improvements are sufficiently funded through the Stormwater Utility.

Green Infrastructure

- Continue to coordinate state and federal wetlands programs to conserve and restore Class II and Class III wetlands within the City.
- Continue to undertake education initiatives, use best management practices, and comply with requirements for erosion control measures and illicit discharge monitoring to minimize polluted stormwater runoff, in accordance with the City's municipal separate storm sewer system (MS4) permit.
- Continue to make use of the City's Open Space Fund to purchase lands or related rights, and to maintain these lands, for purposes of conservation of ecological and wildlife habitat and productive farmland and for purchase of recreational lands in line with the goals of this Plan.
- Continue to work towards the elimination of pesticide use in the community.
- Continue to maintain Veterans Memorial Park as the hub of community activity and pursue development of the community center and aquatics facilities proposed in the 1989 Dorset Street Park Master Plan and updated in the management plan for a community aquatic center approved by the City Council in 1999.
- Continue to use techniques available to the City to conserve important and connected natural areas identified in the City's Open Space Strategy, Southeast Quadrant Open Space Plan, and other research.
- Continue ongoing partnerships in education related to natural areas within the City.
- Continue to retain the City's existing inventory of street trees and increase both the variety and number of street trees through regular maintenance.

Land Use Planning Areas

- Continue to facilitate the use of transfer of development rights within the SEQ zoning district to achieve the smart growth objectives for the SEQ.
- Continue to allow a neighborhood commercial center along Dorset Street in the area of the Chittenden Cider Mill.
- Maintain Spear Street as a north-south collector using access and traffic management techniques and pedestrian pathways and crossings.
- Continue to allow neighborhood areas with a buildable density of between four and eight units per acre, using development rights transferred from areas in the SEQ designated for conservation or protection.
- Continue to allow a small mixed-use commercial node similar to the R7-NC district in the vicinity of the IO district, near Hinesburg Road.

- Continue to limit uses in the Industrial-Open Space District to light manufacturing, research and testing, and office uses, and take steps through zoning and development review to limit potential adverse impacts on adjacent natural areas and residential neighborhoods.
- Continue to ensure that the open space and buffer area provisions are consistent with the SEQ Concept Plan and lead to the creation of usable, attractive conserved spaces.
- Continue to require an integrated mix of housing in the SEQ zoning district.
- Continue the designation of a three hundred foot buffer around the perimeter of the Great Swamp and Cheese Factory Swamp as an additional primary natural area subject to the same limits on disturbance, development or subdivision.
- Continue the designation of lands within a three hundred foot buffer area around the perimeter of the other Primary Natural Areas, and the lands within Secondary Natural Areas, as a supplemental restricted area with limitations on development, subdivision, and disturbance.

This page has been left blank

The quality of life, character, livability and viability of a community depends, to a very large extent, on its land use pattern. Decisions made over time on how to use the land greatly influence the quality and livability of our residential neighborhoods, economic viability of our businesses, transportation efficiency and safety, accessibility to work, shopping, and school, quality of air and water, and the overall character or image of a community. The land use plan is the fundamental element of the overall comprehensive plan. It provides strong guidance for all future development and redevelopment in the community and directly affects all other elements contained in the plan.

3.1. Current Land Use

Development Patterns

From its rural agricultural beginnings and its establishment as a separate municipality in 1865, South Burlington has grown and changed to a growing City with an exceptionally large range and diversity of land uses. The City's growth, and the diversity of its land use changes, is largely due to its location. South Burlington is "Vermont's transportation crossroads." It is the site of Burlington International Airport and the busiest exit on Interstate 89. It hosts many growing, high employment industries such as GE Healthcare, Ben & Jerry's, and Keurig Green Mountain among others, and is very close to the state's other major employment centers of Burlington, Williston and Essex Junction. The University of Vermont, which straddles the Burlington-South Burlington City line, and the University of Vermont Medical Center in Burlington further drive the City's land use change environment and the mix of uses.

South Burlington's land use environment is completely unique in Vermont. The City has everything from the state's major airport to working dairy farms within its borders, but none of the "…historic settlement pattern of compact village and urban centers separated by rural countryside" that is the historic "ideal" of Vermont. As a result, South Burlington's land use cannot be understood or managed in terms of the "traditional Vermont landscape"; it is its own community, and it will continue to be shaped uniquely through the decisions made by its leaders, landowners and citizens.

From 1865 to 1945, the community consisted of a number of large farms. Streets built as connections to the neighboring City of Burlington were the most influential factor in determining where growth would develop: to the present, the greatest concentration of housing and commercial development exist along the Route 2 and Route 7 corridors. However, there has never been an historic center to give the community an economic or visual focal point. The post-war suburbanization trends

common in the rest of the nation strongly affected South Burlington, long before Vermont's statewide land use statutes were in place. Predominantly single-family home neighborhoods such as Mayfair Park, the Orchards and the Airport Parkway area sprouted along Williston Road and Shelburne Road at the advent of the Fannie Mae-driven post-war housing boom. Strip commercial development along the same roads came when greater prosperity and access to vehicles allowed Vermonters to change their shopping, employment and living patterns. Eventually, as the region's economy grew and modernized, demand for single-family housing spilled over into the Southeast Quadrant and led to the subdivisions that began to appear there in the late 1980s and 1990s.

Since the 1990s, the City has sought to redirect land development into planned districts and corridors. Balancing residential and commercial/employment growth at roughly a 50/50 mix has been a goal since the early 1990s; more recently, this goal has been expanded to incorporate additional goals such as infill and redevelopment in developed corridors, and creating a greenspace network throughout the City. Thus, the land use plan in this Comprehensive Plan builds on work done over many years to expand and refine these concepts.

3.2. Future Land Use

A. Overview of the City's Land Use

Land Use Planning Background

Future Use of Land. The City's 1985 Comprehensive Plan set in place a number of policies that attempted to redirect the City's development pattern into a planned pattern that would, over time, support greater transit use, create a variety of residential options, and develop concentrated economic and social activity in local service centers. The plan called for directing development to the City's existing urban core via higher densities and infrastructure investment, creating a mixed-use, high density City center, and encouraging more pedestrian and transit friendly development along the City's major arterials. Since then, the City has set out to continue and strengthen the land use policies contained in the 1985 plan.

The 1991 Plan reinforced these goals and added another: to increase efforts to protect important natural areas and open spaces, namely in the Southeast Quadrant. This became the main land use theme of the 2001 Comprehensive Plan, which also recommended preparation of an open space plan, and recommended a complete re-evaluation of the land use plan for the Southeast Quadrant.

These goals were carried through the 1996 and 2001 plans. Studies and planning work completed by the Planning Commission from 2000 through 2006 directly carried out many of these recommendations. An Open Space Strategy was completed in 2001 and was followed by three Southeast Quadrant studies: The Ecological Assessment (2004) Bird Habitat Study (2004), and a new master land use plan for the SEQ (2005).

The 2006 Plan included a revised and expanded chapter on the Southeast Quadrant, reflecting the results of the studies and input and complementing the zoning regulations amendments passed that same year encouraging preservation of the areas of greatest ecological significance, creating a new village center on Dorset Street around the Chittenden Cider Mill, and making public investments in a series of connected parks and paths woven around new, walkable and connected residential neighborhoods through use of a Transfer of Development Rights (TDR) program; continued implementation is strongly supported by this plan as well.

The focus on infill has also seen great progress in the past decade. The Farrell Street/O'Dell Parkway development, with over 400 new housing units as well as redevelopment of the old Mall 189 complex, is a model new neighborhood that has received notice throughout New England. Many smaller infill projects were proposed and built after the Planning Commission completed zoning amendments that reduced or eliminated minimum lot sizes, frontage requirements and large setbacks, and that increased the base density in the City's core and corridors from seven to 12 or 15 units per acre.

In the past five years, the City has initiated studies and actions to further support quality mixed use environments along its primary corridors, including the US Route 2 Corridor Study, Williston Road network analysis, and Shelburne Road corridor studies. The City has also pushed forward with the development of City Center, gaining State New Town Center, Neighborhood Development Area, and Tax Increment Finance District designations, advancing the design / reconstruction of Market Street, Garden Street, and Dumont / City Center Park.

At the same time, the Chamberlin neighborhood adjacent to the Burlington International Airport has seen some of its housing stock removed due to a noise mitigation/ home buying program funded by the FAA and administered by the airport. Establishing a new integrated transition between these two land uses will be a focus over the next several years.

This 2016 Plan seeks to further build upon these core attributes, focusing on strengthening policies in support of the Goals of the Community listed in this Plan.

General Land Use Objectives

Objective 39. The majority of all new development will occur within the Shelburne Road, Williston Road, and Kennedy Drive Corridors, and other areas within the Transit service area.

Objective 40. Prioritize development that occurs within the community into the higher intensity areas identified within this Plan.

General Land Use Strategies

Strategy 92. Allow phasing on individual projects as needed to ensure that development occurs only in conformance with the City's ability to provide services.

Strategy 93. Participate in Act 250 reviews on both local and regional projects which affect the City.

Strategy 94. Assure that designated open space areas are consistent with the district (zone) in which they are located and physically and functionally suitable for their intended use.

B. Future Land Use Plan

Overview. It is the intent of this Plan to maintain an effective balance between green space, natural areas, residential, commercial and industrial development. The future land use plan strives to reflect the overall goals of the City and to balance the various objectives and strategies of this document.

Planning Areas. This plan designates a series of four quadrants and one district that share common geography, land use, and transportation patterns, and where the goals, objectives, and strategies of this plan will require careful consideration. For each quadrant or district, this chapter provides an overview of existing land use, projected future land use, key planning issues, and transition areas.

The quadrants/districts discussed in this plan include the:

- **Central District**, including City Center and surrounding areas;
- **Northwest Quadrant**, including areas west of the Airport and north of I-89, exclusive of the Central District;
- **Northeast Quadrant**, including the Burlington International Airport and areas north of I-89;
- **Southwest Quadrant**, including the Shelburne Road corridor;
- **Southeast Quadrant**, including areas south of 1-89 and east of Spear Street.

Context and Connections. These sections are intended to complement the more thorough inventories and analyses of the Green, Grey, Blue, and Social Infrastructure chapters by highlighting some of the notable opportunities and challenges within the quadrant or district. Plans and concepts for future use of land in each quadrant or district is tied closely to the analysis, objectives, and strategies enumerated within the other chapters of this Plan. Each of the chapters are intended to be read together, guided by the community-wide goals set forth in this plan.

Future Land Use Map

The future land use plan is accompanied by a map of the same name (Map #11). This map depicts the five quadrants/district described above, and provides for a series of broad categories of planned land use and intensity. The features on this map are purposefully blended, so as not to focus on a specific parcel or delineation between land use features. That level of specificity is left to the Official Zoning Map.

Future Land Use Categories Land use intensity can be difficult to define, is almost always relative, and can often be controversial. It is often erroneously interchanged with the concept of density, particularly as a measure of housing units per acre. Instead, intensity is a reflection of many measurable and immeasurable points, including types of uses, number of residents, square footage, massing and heights of buildings, clustering and lot coverages, proximity to roadways, type and frequency of roadways.

The future land use map and this plan recognize and respect the limitations of compressing many different, distinct areas of such a diverse community into only five land use categories. There are well over a dozen distinct neighborhoods, and more than 50 current zoning districts in the City. As such, the future land use map is not meant to replace a more detailed zoning map, define residential building density, or enumerate the specific figures for other factors of land development intensity, but rather to provide guidance to the related Land Development Regulations, such that the distribution and relative effect of these developments is in keeping with the City's overall goals.

The Future Land Use Map is a reflection of these goals and has been arranged into the following relative categories. These should not be construed as absolute, but rather taken as parameters within which land use is approached.

- **Very low intensity, principally open space**. These lands emphasize conservation, water quality, and wildlife protection. While development is not inherently prohibited, these areas reflect the lowest building densities in the City. Uses other than open space and agriculture should have restrictive regulations and minimize their footprint. Primary and secondary natural resources are given priority and disturbance is to be carefully avoided or minimized. Land development regulations should provide ease of approval for open spaces, including agricultural land and related uses. Roadways and other breaks should be minimized and carefully planned to avoid negative impacts to wildlife corridors.

- **Lower intensity, principally residential.** Fostering a strong sense of neighborhood, these areas are primarily residential in use, with number of units and size of buildings to be among the lowest in the City. Open spaces are accessible and thoughtfully arranged as community gathering places, and roadways should be largely limited to local traffic with low volumes. While residential dwellings need not be all detached, the general character and appearance is that of a single family neighborhood. Building heights reflect this character. Small lots and small buildings are encouraged. Commercial uses are limited to those serving a small or local population. More intense commercial or industrial uses should be avoided.

- **Medium intensity, residential to mixed use.** These areas support an increased diversity of housing options, with increased building density and slightly increased building heights over lower density residential areas. Housing should be clustered, with residents offered shared amenities and shared open spaces. Otherwise, these lands are similar in characteristics to the Low Intensity Primarily Residential lands. This category may incorporate limited amounts of non-residential uses and activities where the context is appropriate.

- **Medium to higher intensity, principally non-residential.** Intended to foster high quality jobs, these lands provide for medium to large scale

industrial, educational, mechanical and office park environments, among other related uses. Their aesthetics should reflect quality design and promote South Burlington as a welcoming place to work and do business. Residential uses are largely discouraged. Land coverage provides for sufficient green infrastructure, and respect primary natural resources, with slightly relaxed controls for wider roadways, increased parking, and lot coverages. Multi-modal transport services these areas. Development here should be respectful of lower intensity uses where they abut.

- **Medium to higher intensity, mixed use.** These lands are intended to be the most compact and most intensely developed in the City and support employment. Residential densities are higher than other designations, as a matter of allowance and as a goal. Housing options are varied, but focus primarily on multi-family dwellings. Uses should be mixed within the block, and mixed within buildings whenever possible. Infrastructure is efficient, and transportation is emphasized towards pedestrians and cyclists and provision of large scale non-shared parking should be discouraged. Open spaces are part of the public realm. Building heights, lot coverages, and other building dimensions are higher than other future land use areas.

Together, these broad categories are intended to encompass key issues and areas addressed in this Comprehensive Plan and provide an overall framework for implementation of the plan. Land use policies for these areas are reflected under the objectives and strategies of the Plan and enacted through the various tools described in the implementation section of the Plan and elsewhere.

Categories purposefully blend into one another and in some cases blend into a white background. These blended areas include transitional areas within the City, where the land development regulations and other policy documents of the City may specify tools for effectively managing changes in intensity, land use patterns, resources, or transportation patterns.

Finally, a series of themes that cross through multiple neighborhoods, such as mixed use corridors, transition areas, and natural resource corridors discussed in the text are depicted on the map.

C. Land Use Planning Areas

Central District

Area Included. The Central District encompasses the planned civic, social, and economic core of the City and includes a diverse mix of commercial corridors, transportation systems, multi-family housing, schools, undeveloped land, and designated parks. It includes the Williston Road corridor from I-89 to Hinesburg Road, and portions of the Dorset Street and Hinesburg Road corridors north of Kennedy Drive.

Current Land Use. The Central District includes an eclectic diversity of land uses, predominantly commercial, that partially interact with one another. Developed largely as commercial and employment centers to serve nearby residential neighborhoods and travelers beginning in the 1940s, this area slowly evolved into a loose "center" of South Burlington. Today, this includes three schools and related grounds, City Hall, Fire Station #1, retail, office, and medical establishments along Williston Road and Dorset Street, the University Mall and Blue Mall, and a limited number of multi-family

Planned State Designation Areas - Central District

residential homes. Immediately surrounding the District are several residential neighborhoods.

These distinct uses are connected together via the three principal arterials in the area and a pair of natural areas, but virtually no secondary streets. These principal arterials serve both local and regional traffic. The result is a "core" to the community that is both closely linked via geography and transportation and also separated from itself in terms of pedestrian activity or shared sense of community.

Future Land Use. The vision for the Central District is to effectively blend existing neighborhoods, commercial areas, natural areas, underdeveloped properties, and undeveloped lands into the true downtown of South Burlington. This downtown will provide increased connectivity through new cross streets; support an integrated mix of housing, retail, and employment; and be a primary focus point for compact, walkable development within the City.

This area, and specifically the areas along both sides of Dorset Street, Williston Road, San Remo Drive, and along the existing and planned Market Street and Garden Street, has been an area of intense community effort and energy. This area is intended to not only create a focal point for the City by unifying the entire district through infill development, but also to support a significant portion of the local demand for commercial development and multi-family housing in a compact, sustainable manner.

South Burlington's City Center initiative, which encompasses much of this District, will support this objective by establishing and enhancing public buildings and gathering spaces, and building or reconstructing a series of streets that would connect to the principal corridors in the area. Combined, these provide opportunities for housing and employment in an area well served by public transit and existing public utilities, and create linkages to existing neighborhoods in the area.

The Williston Road, Dorset Street and San Remo Drive sections of the Central District contain significant opportunities for redevelopment. Initially built as low-density, strip- and mall-type commercial development (and light industrial development along San Remo Drive), these areas are witnessing a transformation toward more compact development. Over the past 30 years, zoning in the area has been updated to encourage more mixed use, walkable development. In 2015, the City is in the final stages of adopting entirely new regulations in the area that focus on quality built form, a reduced emphasis on land uses, and a streamlined review process. This is being coupled with opportunities for Tax Increment Financing investments through public-private partnerships to support high quality, urban scale development. Eventually strip-development will be replaced or filled in with higher value, compact development, more efficiently using land in this core area and supporting walkability throughout.

The City has also sought and received a New Town Center and Neighborhood Development Area designations. These are important tools to support compact, pedestrian and bicycle-friendly infill development. The boundaries of these districts

should be regularly evaluated and modified as appropriate to best meet the future needs of the community.

A limited amount of undeveloped land encompasses adjacent Market Street and the future Garden Street. This area represents an additional opportunity to link together parts of the Central District and provide further opportunities for compact, infill development.

The intent for this entire area – developed and undeveloped – is to create an environment that has all of the elements, functions, programing and features to become South Burlington's principal downtown area.

Similarly, the intent of this Plan is to integrate this area seamlessly into the fabric of its adjacent areas – schools, neighborhoods, and transportation corridors. The existence of these surrounding areas represents a built-in market for and geographic delineation to the City Center area as a whole. The conceptual plans for City Center do envision the development of a portion of the Central School lot, or allow for a future closure and redevelopment of the site as a whole. This concept of closing the school will need to be the subject of substantial public discourse.

The community has invested heavily in the City Center area in recent years. The concept for a City Center dates back into the 1980s, as noted in the introduction to this Chapter, but has seen a significant uptick in the past five years. Projects underway include:

- Design and construction of Market Street (including permitting related to Federal funding);
- Design of Garden Street, to connect the Healthy Living/Trader Joe's area to Midas Drive, Al's French Frys and White Street and improve nearby intersections;
- Design and construction of stormwater facilities to improve water quality in the area;
- Design and construction of enhancements to Dumont Park (City Center Park);
- Completion of a need analysis and location recommendation for public facilities (Library, City Hall, and Recreation Center);
- Development of new, streamlined Land Development Regulations for the area which are inspired by form based coding and include new open space requirements;
- Receipt of New Town Center and Neighborhood Development Area designations from the State of Vermont in support of the downtown;
- Adoption of a Tax Increment Finance District to allow for public-private partnerships in fostering high quality, mixed-use, pedestrian-scale urban development;
- Creation of standards to require affordable housing as a component of all larger-scale residential development in the area;

- Development of tools to support an efficient, pedestrian, bicycle, and transit-focused transportation system to meet the needs of the downtown; and,
- A transportation network analysis of the Williston Road corridor that aims to implement future transportation improvements to meet the demands of additional development.

Key Planning Issues. Important planning considerations in the Central District relate to its auto-dependent, strip-development physical layout.

- **Transition from Suburban to Urban Downtown.** Perhaps the most significant area of focus, time, and attention for all participants in the establishment of the City Center area is the transformation of the area from a largely retail, auto-dependent, suburban environment to one that functions as a full downtown. The planning challenges included in this transformation center of how to meet the needs of today's businesses, residents, employees, and shoppers while at the same time supporting the changes in the physical environment that will be needed for the downtown to function effectively. This includes zoning standards, transportation systems, parking environments, and deployment of community resources that support this transition.
- **Traffic, Parking, Pedestrian Accessibility.** Traffic along Williston Road and Dorset Street is generally heavy and can exceed the system's capacity at peak hours during some seasonal periods. This is due to a number of factors, including the presence of I-89's Exit 14 at the north end of Dorset Street, the arterial design of the roadway network that does not allow for any distribution of vehicles, and the heavy demands put forward by the University Mall property and other retailers in the area at peak seasons/hours, all in a predominantly auto-dependent environment. These challenges are exacerbated by a built environment that has favored surface parking in front of buildings, improving convenience for drivers but discouraging all other modes of transport.

  These challenges are being addressed incrementally by various partners and parties. In 2009, the Chittenden County Transportation Authority redesigned its bus service in the area, creating a new route centered on the Williston Road corridor that offers 15-minute headways at peak hours. Zoning in the area, meanwhile, is transitioning to encourage more pedestrian-friendly site design. Additional service is under discussion and will be an integral part of a successful downtown. New streets north and south of Williston Road are proposed and planned to create better connectivity for all users, improve safety at state identified high crash locations, make more people-friendly environments, and relieve pressure from key intersections. New street design standards and specific roadway improvements are under development that support the complete streets approach.

  Planning for City Center includes the adoption and approval from the State for a Tax Increment Finance District in the area to support needed transportation infrastructure improvements, such as the redevelopment of Market Street, Williston Road streetscape improvements, a bicycle and pedestrian bridge

over I-89 connecting City Center to the residential areas and University of Vermont campus, and structured parking.

It is also recognized that the City will have a greater tolerance level for slower-moving vehicle traffic in the vicinity of City Center. Compact, pedestrian-friendly, urban areas are not intended to prioritize high-speed, pass-through vehicular movement.

- **Public Amenities and Open Space.** The community vision for City Center calls for the establishment of one or more public amenities to serve as a focal point for the community. The lack of any such amenities – aside from informal walking trails through Dumont Park – is a missing link in the core of the City. Recreational facilities are available at the schools in the area, but there is no formal public gathering area save for the bandshell at Veterans Memorial Park, located nearly 1.5 miles south of the Dorset Street/Williston Road intersection, and Jaycee Park within the Chamberlin neighborhood.

  Planning for City Center includes a new public library, City hall, and/or recreation center, a central gathering place and public events locale, as well as open space in the vicinity of Potash Brook and walking trails that would lead across the Brook to Dumont Park. In addition to these, gateway artwork and gathering points are envisioned for the area. The gathering place is planned to be in the range of ½ to 2 acres in size, be located near public facilities, clearly accessible to the public, and bear a close relationship and interaction with adjacent development.

  The presence of these community facilities is an integral component of this area. They will transform a retail area into a true downtown. The use of Tax Increment Financing to support these facilities was approved by the Vermont Economic Progress Council in recognition of the critical role, economic and social, that community facilities play in a successful downtown.

  Further to the south, a significant open space area exists to the east of the high school. Maintenance of this natural area and walking trail system should be continued.

- **Placemaking.** The development of City Center is a unique opportunity to enable a place- to make a 'there' here. Placemaking will foster the creation of a destination built from community interests, of the community's goals, and for a true community destination. City Center will become the front porch for South Burlington- a place to meet neighbors, greet visitors, and inspire pride in the community. This will include high quality of design on buildings facing public streets, new programmable public spaces and facilities, attractive streetscapes, connectivity to nearby neighborhoods, and community events that regularly attract people to the downtown.
- **Supplying Energy Sustainably and Reliably.** The development of the City Center requires energy to heat and light area buildings and to power transportation systems. This new development also offers the opportunity

to define land use and transportation patterns and design new structures and service them in a way that minimize energy supply costs.

The enactment of Act 89 by the State legislature strengthens the statewide Energy Code that governs new construction and major renovations of existing buildings. The statute offers the City the opportunity to adopt a "stretch code" that would require construction quality that will reduce energy costs for building owners for many years in the future. Redevelopment allows for new buildings with reduced energy costs and strengthens the ability of the area to continue operations during power outages that result from severe storms and other emergency events. Building design and site planning under consideration offers the opportunity to provide for on-site solar energy supply that fits with the development of a City Center integrated energy supply system.

- **Stormwater Treatment.** Among the most significant challenges faced by the Central District is the logistics of sufficient stormwater treatment. Much of the area was developed prior to the advent of sufficient treatment systems, and includes significant paved areas. Two watersheds – Centennial Brook and Potash Brook – cross the area. Both are listed on the State's Impaired Waters list for stormwater.

  The state, City, and individual property owners have begun to work on these issues collectively. The City received a $1.1 million grant from the Army Corps of Engineers to work with private property owners in the development of a stormwater system to treat run-off from the Williston Road area east of Hinesburg Road. In addition, individual property owners have begun re-designs of existing facilities to comply with rules established by the Vermont Agency of Natural Resources.

- **Housing Affordability.** The Central District provides the community with the opportunity to meet a significant portion of the anticipated demand for housing in the coming years. The challenge with this will be in fostering the development of housing that is both affordable to a mix of households and also meets their needs as families. The compact nature of the area, combined with high land costs due to its location, indicates that multi-family housing is the most viable form of residential development for the area. Multi-family housing can be friendly to households of various types and incomes, but relies on the availability of public amenities such as safe and accessible parks and services nearby. The City will likely need to continue to make use of incentives and regulatory tools to foster affordability in this area.
- **Focus of Development.** The vision for City Center includes a goal of encouraging development in this area in order to make use of existing built areas, already served by substantial public infrastructure, and to relieve some pressure on open spaces, natural areas, and farmlands elsewhere in the City and the region. The establishment of a mixed-use area will serve to meet this goal by creating conditions for development to take place in a compact, pedestrian-friendly environment. It is a greater challenge, however, to couple this with initiatives to conserve land elsewhere in the community.

The pattern of development in the City over the past 25 years has been a mix of some compact, "infill-style" development – such as at Farrell Street – together with substantial continued development on the fringes of the City, such as along Allen Road, Lime Kiln Road, and in the Southeast Quadrant.

The community will need to continue to explore tools to focus development in the core areas of the City, while continuing to meet objectives of affordability and family-friendliness.

Central District Objectives

Objective 41. Create a cohesive, diverse, dynamic and people-oriented City Center with a strong identity and "sense of place" that incorporates harmonious design, an appropriate mix of residential and non-residential uses and public amenities that complement adjoining neighborhoods.

Objective 42. Establish vibrant streetscapes, civic spaces, public art and public facilities in the Central District and City Center.

Objective 43. Reserve and establish open space areas for public enjoyment, natural resource conservation, and stormwater management, including a greenbelt along Potash Brook.

Objective 44. Complete master planning for City Center to create opportunities for low impact stormwater management that incorporates sustainable design and green infrastructure.

Objective 45. Conserve and protect existing nearby residential areas.

Objective 46. Minimize overall demand for parking in the Central District through design, regulations, and investments that foster pedestrian, bicycle, and transit use and provide efficient, aesthetically pleasing shared parking options.

Objective 47. Promote interconnectivity and integration of public facilities including schools and school facilities open to the public with surrounding neighborhoods, to include safe routes for children and neighborhood residents to walk and bicycle to school, a public library, recreation services, and other city services.

Central District Strategies

Strategy 95. Maintain Dorset Street and Williston Road as important transportation corridors for all users and reduce curb cuts.

Strategy 96. Maintain Hinesburg Road from Market Street to Kennedy Drive as a residential corridor.

Strategy 97. Develop a centrally located, well-designed public gathering space to serve as the focus of the new City Center.

Strategy 98. Include local residents, businesses and property owners in the design of public facilities.

Strategy 99. Enhance Dumont Park within the City Center as a forested nature park that enhances and ecologically supports City Center development, and provides public green space for passive recreational use, to include a linking, interconnected public path and trail network.

Strategy 100. Designate a protected greenbelt along the length of Tributary 3 of Potash Brook throughout City Center of sufficient area and width to restore, protect and enhance water quality, stream channel and wetland functions, and adjoining riparian areas; to manage and treat additional urban runoff; and which accommodates compatible recreational use of the stream corridor, including planned public boardwalk crossings.

Strategy 101. Work with property owners and developers to implement stream channel, stream flow and wetland restoration plans for Tributary 3 of Potash Brook, as required for stormwater management and mitigation to improve water quality and meet total maximum daily loads (TMDLs) for the brook.

Strategy 102. Construct new City Hall, library, and/or Recreation Center, and support the location of new State and Federal Offices and post office (retail or office portion only) in centralized, walkable environments in the Central District.

Strategy 103. Regularly update the City's Official Map to include the most up-to-date plans for streets, parks, recreation paths, other civic spaces and utility infrastructure, including public paths, greenways and civic spaces planned for public acquisition and development within City Center. Pursue public acquisition of mapped facilities through public dedication, and as available funding allows.

Strategy 104. In addition to the use of public funds and TIF District revenues, seek funding and explore public-private partnerships to provide necessary public amenities including green and civic spaces, sidewalks, trees, outdoor furniture and lighting, parking and public transit amenities.

Strategy 105. Develop an efficient, convenient and attractive transportation and parking plan to serve the center area and fund and maintain public parking facilities and walking, biking, and transit amenities.

Strategy 106. Use design review and/or form-based coding to promote the development of aesthetically pleasing, pedestrian-focused and highly functional environments.

Strategy 107. Minimize off-street surface parking.

Strategy 108. Evaluate zoning along Hinesburg Road north of Market Street and other areas adjacent to neighborhoods to foster a harmonious transition in land uses.

Strategy 109. Complete construction for the Federally- funded Market Street Improvements and other projects listed within the City's Tax Increment Finance District Plan and Capital Improvement Plan.

Strategy 110. Support the establishment of a Main Street-style, community-based organization to nurture, promote and otherwise support City Center as a South Burlington community and downtown center.

****

Northwest Quadrant

Area Included. The Northwest Quadrant is a geographically mixed area of the City that consists of multiple separate and distinct residential neighborhoods linked together – and separated by – arterial roadways and natural features. It is bounded by Burlington to the west, I-89 to the south, the Burlington International Airport to the northeast, and industrial/open space areas to the east. The Central District is contained within this larger Northwest Quadrant.

Current Land Use. The Northwest Quadrant consists predominantly of residential neighborhoods interspersed with a handful of large parcels of open land and dissected by several major transportation facilities. It is home to an array of distinct neighborhoods,

including Mayfair Park, Pine Tree Terrace, Chamberlin, O'Brien Farm, Spear Street, East Terrace, Valley Ridge, Tree Tops, Twin Oaks, Winding Brook, and others.

The majority of the neighborhoods north of the Potash Brook, which parallels Kennedy Drive, consist of single- and two-family homes. The majority of these homes were built between 1945 and 1970, with a small number of infill sites, and one full neighborhood, Quarry Ridge, built since that time. Neighborhoods along Kennedy Drive were built beginning in the 1970s and include primarily multi-family homes of varying types, with a small handful of exceptions.

The Northwest Quadrant is home to a handful of largely undeveloped properties. These include, notably, land between Williston Road and Patchen Road, adjacent to I-89 that includes two ravines; land on both sides of Old Farm Road; a significant wetland complex that houses the main branch of the Potash Brook north of Kennedy Drive; and lands belonging to the University of Vermont along Spear Street that are used for both agricultural and conservation purposes.

Finally, the Quadrant is somewhat characterized by the transportation network and associated commercial strips that divide it. Key among these are Williston Road (which links the Chamberlin and Mayfair Park neighborhoods), Kennedy Drive (which links several distinct neighborhoods), and I-89, which separates the East Terrace and Spear Street neighborhoods from the rest of the City.

Future Land Use. Several of the oldest neighborhoods in South Burlington are located in the Northwest Quadrant. It is the intent of this Plan to maintain these neighborhoods and their housing stock and protect them from commercial encroachment, while at the same time supporting the evolving needs of its residents, improving pedestrian connectivity and access to services, and allowing for infill development that is in keeping with the existing built environment.

This Quadrant will always be both tied together and split by transportation arteries that serve local and regional purposes. It is the intent of this plan to allow for the continued regional use of these arteries, in a manner that is also conducive to safe access and use by residents and visitors on foot, on bicycle, and via public transportation.

A key interface of the residential neighborhoods and transportation arteries exists along Williston Road. This corridor serves multiple purposes and is proposed to continue to do so. The section of Williston Road west of Hinesburg Road is located within the Central District. The section immediately east of Hinesburg Road is primarily residential and should continue to be used in this manner. East of Victory Drive, land uses are planned to include a mix of residential (on the north side) and non-residential (on the south side). East of Mills Avenue, non-residential uses are programmed for both sides of the road. In all of these areas, development should create inviting spaces for residents in nearby neighborhoods to walk to services along Williston Road.

Neighborhoods along Kennedy Drive have traditionally kept a heavily landscaped face to the street. This should remain as future neighborhoods are established in the area.

Remaining undeveloped areas provide an opportunity for multiple uses, including housing at a density and design that is transit-supportive, recreational lands, and natural areas. Limited neighborhood commercial areas are envisioned. Finally, it is the intent of this quadrant to integrate with surrounding planning areas, notably the Central District and Northeast Quadrant.

In 2015, the City, in collaboration with the CCRPC, School District, and Airport, initiated a Chamberlin Neighborhood Airport Vision & Plan project. The objectives are to establish a process for productive communications between the airport and the neighborhood; facilitate development of a neighborhood land use/transportation plan that strengthens the neighborhood, seeks to retain affordability of housing, relates the neighborhood to development of City Center, continued reinvestment along Williston Road, implementation of SB School District plans, and any planned transportation improvements in the vicinity of the project area, and results in an improvement plan for parks, streetscape, and other public amenities. Other goals of the project include identifying multimodal transportation connections/improvements, both transitional and long-term, that enhance neighborhood mobility and livability, while maintaining efficient ground access to the airport, and developing, with collaborative input, a vision for the neighborhood that can help shape the reuse of Noise Land as described in the Part 150 Noise Land Inventory and Re-Use Plan the airport develops every five years in compliance with Airport Improvement Program Grant conditions.

Key Planning Issues. While for the most part the Northwest Quadrant's built environment is stable, its extremities have seen substantial changes and this area is likely to continue to evolve, as will the demographics of its residents and their associated needs. Among the key planning issues facing this area:

- **Maintenance of Existing Housing and Neighborhoods.** As the first of the neighborhoods in this Quadrant approach 60 years of age, the demands placed upon both the housing stock and the neighborhoods as a whole are changing. Household composition has evolved, with greater demands for space within buildings and for pedestrian access to nearby services. New housing has been added in both new neighborhoods and as infill within existing neighborhoods. In many cases, this new housing has been well integrated into existing areas, but not universally. As demand remains strong for housing in the core of Chittenden County, these neighborhoods will likely continue to see interest in infill development. This can be a positive force, providing new families with the opportunity to make use of schools in the area and strengthening neighborhood connections, but should be done in a manner that effectively integrates new with old.
- **Affordability.** Much of the more moderately-priced housing in South Burlington is located in the Northwest Quadrant, within the multi-family and single-family neighborhoods. This housing is generally relatively small in scale and compact with its neighbors. These attributes are among the chief reasons for their relative affordability. The challenges of affordability persist, however, with some households struggling to retain their homes while other

homes are removed by the Burlington International Airport as part of an FAA-funded noise mitigation program.

The community will need to continue to work towards creative solutions to these challenges, allowing for new, similarly affordable housing to take the place of what is being lost, and giving households opportunities to stay in their neighborhoods through multiple stages of life.

- **Pedestrian and Bicycle Infrastructure.** The principal streets that bisect the Northwest Quadrant carry some of heaviest traffic loads in the State. These include Williston Road and Kennedy Drive, and to a lesser extent Airport Parkway, Spear Street, and Patchen Road. Of these, only Kennedy Drive contains full amenities for pedestrian and cyclists needs. The remainder can be difficult to cross at times and do not always contain sidewalks. Local roads serving these neighborhoods contain relatively low volumes of traffic but are in some cases perceived as being unsafe because of a lack of sidewalks, roadway designs that encourage high speed vehicular traffic, a lack of additional alternatives, or all of the above.

  The neighborhoods within the Northwest Quadrant are undergoing an incremental transition in terms of amenities and safety. New sidewalks are being planned for areas serving schools. A handful of new streets are planned to provide both residents and visitors with alternatives for accessing commercial areas. Ongoing public education is needed to remind drivers of the need to be attentive and respectful within residential areas.

- **Neighborhood Connectivity.** The historic development of each of the distinct neighborhoods within the Northwest Quadrant have been just that: distinct and separate. Connections – in terms of streets, walking paths, recreation paths, etc. - are limited in both number and function. This has led, on a positive note, to a strong sense of community in these areas, but also to isolation from both other neighbors and from services and stores. While several of these neighborhoods are pedestrian-friendly within their own confines, they face significant obstacles in reaching nearby amenities.

  A policy of establishing street and recreation path connections in conjunction with new development has been followed for several years throughout the City. In this area, the handful of newer roads have been connected, but the overall problem remains in place. The plan's future transportation map does include a series of future potential connections in the community, notably an east-west street parallel to Williston Road on its north side from Patchen Road towards Dorset Street, and a street connecting Eldridge Street to Old Farm Road. The map also illustrates additional recreation path connections in the northern part of the City, notably in the Airport Parkway area, connecting to the Country Club Estates neighborhood on the north side of the airport.

- **Public Amenities and Open Space.** The presence of neighborhood parks and open space is spotty throughout the Northwest Quadrant. Only one

formal developed park, Jaycee, exists, though three additional school sites are either within or adjacent to the Quadrant. The lack of public parks is especially apparent amongst multi-family neighborhoods, where private facilities were constructed in the 1970s and 1980s, serving their immediate needs but offering no opportunities for wider use or interaction.

Larger tracts of open space exist in certain instances, notably along the Potash Brook. Other areas, such as the headwaters of the Centennial Brook, have not been conserved in the same manner. Future development – especially of new neighborhoods – should incorporate public amenities such as parks

Transition Areas. Northwest Quadrant transition areas include:

- **Burlington International Airport.** Among the most challenging issues facing the Northwest Quadrant – and the City as a whole – is the interface between the Burlington International Airport and the adjacent Chamberlin neighborhood. This issue is discussed in great detail in the transportation chapter of the Plan, but it a topic that crosses multiple subject areas. Over the course of several years - from the late 1990s projected through towards 2020 - the Airport is carrying out a plan to purchase noise-impacted homes from homeowners who approach them with a request to sell. These homes, approximately 180 in total, are located within a noise contour line of 65 decibels (average day-night). These homes, once sold to the Airport, are required to be removed or relocated. The result is a loss of a portion of one of the City's historic neighborhoods, the loss of housing stock within the City, and a challenge of determining how best to make use of the land in the future.

  The airport has been developing an update to its master plan that includes a vision of the future use of its land. Several community meetings have been held in which the Airport and community have discussed a combination of green space to buffer the neighborhood from the Airport, and additional space for future Airport facilities and access. The issue of how to best use this land in the future, and whether street connections should be preserved or curtailed in the future remains an ongoing discussion amongst all those involved.

  The repercussions of the growth in use at the airport extend beyond the immediate properties, however. Several City streets – Airport Parkway, Airport Drive, White Street, Patchen Road, and Kirby Road among them – serve to both provide access to the Airport and to connect adjacent municipalities with Williston Road. The result is increased traffic on these traditionally residential streets. As the City considers how to meet transportation and land use needs of the airport and City, care should be given to minimizing through-traffic on purely residential roads.

- **Campus Interface.** The Northwest Quadrant includes the University of Vermont in two areas – along Spear Street and along Patchen Road. In both cases, residential neighborhoods abut University lands.

The Spear Street, East Terrace, and Quarry Hill neighborhoods in particular are tied to the University, in that they are physically close to its athletic facilities and student housing, and include a fair amount of homes used by students and faculty within the neighborhood itself. In 2010, a building on Quarry Hill Road was leased by Champlain College for freshman housing on a temporary basis while new facilities are built adjacent to the campus.

The interface in this area is direct and should be assessed to foster ongoing mutual benefit. South of these neighborhoods the University owns land on the east side of Spear street that has been used for agricultural research. The City and University should work together to develop long range plans for this area.

Along Patchen Road, the University has held discussions with both Burlington and South Burlington regarding potential faculty housing being constructed in the area. Accessibility is among the most significant challenges in this area in both communities.

The presence of the University and College in these areas presents both opportunities and challenges for the community. It is important that the neighborhoods adjacent to the properties continue to thrive and to meet the needs of both residents and students.

Northwest Quadrant Objectives

Objective 48. Maintain existing affordable diverse residential neighborhoods and access to neighborhood parks and other amenities.

Objective 49. Allow for infill development, including parks and civic spaces, that serves and supports the character of existing neighborhoods, with a focus on the replacement of small single-family affordable homes that have been bought and demolished under the Burlington International Airport's "Property Acquisition Plan" in association with its adopted Noise Compatibility Program.

Objective 50. Create transitions from the Burlington International Airport in areas identified for redevelopment that serve or buffer nearby neighborhoods; establish a community vision for the future of this area.

Objective 51. Ensure continued compatibility of University land uses with existing development and conservation patterns.

Northwest Quadrant Strategies

Strategy 111. Refine the City's Land Development Regulations to allow for appropriately-scaled renovation of existing homes and infill development.

Strategy 112. Review the City's Land Development Regulations to encourage or require development along Kennedy Drive to include significant landscaping and/or forested blocks along the roadway in keeping with existing patterns of development.

Strategy 113. Seek opportunities to develop additional public parkland in the Northwest Quadrant using tools available to the City, including the Official Map, Impact Fees, and development requirements.

Strategy 114. Strive to protect existing neighborhoods from incompatible commercial encroachment and traffic disruption through the Land Development Regulations.

Strategy 115. Maintain the section of Williston Road between Cottage Grove Avenue and Mills Avenue as a residential corridor.

Strategy 116. Complete Chamberlin Neighborhood Airport Planning project and revise the Comprehensive Plan with goals and vision for the future.

****

Northeast Quadrant

Areas Included. The Northeast Quadrant includes a substantial portion of the City, stretching from the Ethan Allen Industrial Park east of Lime Kiln Road to I-89. It includes the Burlington International Airport, the eastern portion of Williston Road, Technology Park, Tilley Drive, and bears a close relationship to land uses on the south side of I-89 along Meadowland Drive and Hinesburg Road.

Current Land Use. Present use of land in the Northeast Quadrant is predominately employment-based, with an emphasis on light industry north of the Airport, business-supply retail along Williston Road, offices along Kimball Avenue and Community Drive, medical facilities along Tilley Drive, and a range of uses along Meadowland Drive and Hinesburg Road. Southern sections of this Quadrant include a mix of open land and businesses. In the center of the Quadrant is the Burlington International Airport, which includes commercial and private aviation facilities, Federal military facilities, and airport-related businesses.

With the exception of the Airport, which serves as a transportation hub, much of the remainder of the quadrant is automobile dependent. Recent upgrades in bus service from the Chittenden County Transit Authority have enhanced alternatives along Williston Road and provided limited service to Community Drive, but in general the land use pattern and transportation infrastructure relies on vehicular transportation. Recreation paths have supplemented this network in the Community Drive and Tilley Drive areas.

As noted above, the southern portion of the Quadrant includes a handful of relatively large properties that remain as open land but which are zoned as Industrial-Open Space and Mixed Industrial and Commercial in the vicinity of Hinesburg Road and Kimball Ave, respectively. The Industrial/Open Space zoning district was designed to provide land for high quality, large lot industries and offices whose buildings and operations are consistent with a location in an environmentally healthy and visually sensitive area adjacent to residential neighborhoods. The Lane Press, Dynapower, Verizon, CBA and several other businesses all operate within the IO district.

The Quadrant also includes a handful of residential areas, notably the Country Club Estates neighborhood north of the airport, two small neighborhoods along Shunpike

Road and Millham Court, and the historically rural stretch of homes along Old Farm Road.

Agricultural and open space activities also continue to play a role in the Quadrant, notably at the northern end of the City, along the Winooski River floodplain, along the Muddy Brook, and on both sides of Old Farm Road.

Future Land Use. The pattern of land use and development in the Northeast Quadrant has focused on businesses which require larger properties, can be compatible with the operations of an airport, and/or which may not be easily compatible with residential areas. Future use of land in developed areas should continue to focus on employers and ancillary services. It should also continue to emphasize uses that are less critical within the core of the City. In addition, future redevelopment should make use of improved transit services. Future development, especially in the Tilley Drive/Kimball Ave/Williston Road/Community Drive area should maximize efficiency of land use and support multi-modal transportation. This area should have clear, efficient access to City Center as part of an integrated, urbanized high activity, pedestrian and transit friendly east-west corridor. In 2014, the University of Vermont Medical Center began exploration of installing a consolidated outpatient facility in this area.

Areas within the 100- and 500-year floodplain should continue to be kept free from development. Agricultural and passive recreational activities in these areas should be encouraged.

Residential areas within the Quadrant - such as Country Club Estates, Shunpike Road, and Millham Court - should be reinforced as residential and supported.

The area immediately adjacent to I-89 is presently partially developed. This area should continue to balance the conservation of natural resources and open space – including the Muddy Brook and tributaries to the Potash Brook and – with employment opportunities.

An important consideration for the future land use within this area is the potential for a new Interstate interchange ("12B") in the vicinity of Hinesburg Road. With an interchange, properties would gain substantially improved access; with no interchange, the overall transportation and development capacity of the area could be limited. The City should consider the appropriate land development regulations in this area in decisions related to any future interstate interchanges.

More generally, transportation infrastructure is an important element to the future use of land in this area. Present infrastructure consists primarily of Hinesburg Road, Kimball Avenue, Airport Parkway, and Williston Road.

Key Planning Issues. Key planning issues in the Northeast Quadrant include:

- **Integrated Development.** There is an opportunity on the lands nearest Kimball Avenue/Old Farm Road/Kennedy Drive to include compact residential housing transitioning to mixed employment nearest Technology Park. For this integrated, mixed development to be successful, it should be

walkable, with integrated services and open spaces that offer recreational and agricultural opportunities.

- **Transportation Network and Traffic.** The transportation network serving the Northeast Quadrant is somewhat underdeveloped. Access to the area is available chiefly along Williston Road from Burlington and Williston, along Kennedy Drive, and for the northern portion of the Quadrant, along Lime Kiln Road. The result has been limited truck access to the area. In addition, internal connections are limited.

  The Airport master plan, revised in 2011, projects a doubling of passengers in the next twenty years. This will place additional pressure on the existing road network, much of which is abutted by single and two family homes.

  Potential improvements can relieve some of this pressure. A more detailed planning effort is underway in 2015.

- **Warehousing.** Recently, there have been significant concerns about the suitability of this quadrant for warehousing, particularly in areas adjacent to existing residential neighborhoods. While this area is close to the Airport and the contemplated highway interchange at Route 116 and I-89, the noise and visual impacts associated with truck traffic are potentially very disruptive to residential neighborhoods. This issue has been discussed during the SEQ Concept Plan; among the ideas evaluated was the creation of a warehousing sub-district adjacent to the Interstate. In any case, there was strong consensus that the zoning regulations for the IO district regarding warehousing should be reevaluated.

  The area off Williston Road has experienced significant growth over the last 20 years in corporate headquarters, general office and industrial use. A sleeve under I-89 has allowed the extension of public sewer facilities to industrial lots south of the interstate including Verizon, Lane Press and Dynapower. Areas adjacent to the 535 acre Burlington International Airport in the northeast section of the City contain airport-related and other industrial uses and may continue to be developed for those purposes. Several industrial parks in this area include the Muddy Brook Industrial Park, Gregory and Daughters Park, Greentree Park, Technology Park and the Ethan Allen Farm Industrial Park.

- **Balance of Industry and Open Space.** Current zoning at the south end of this Quadrant seeks to meet both open space and industrial objectives. The area is home to both the Muddy Brook and one of the principal tributaries to the Potash Brook, and has high visibility from I-89 and Old Farm Road.

  The regulations for this area should be evaluated in more detail to assess how best to meet the overall objectives of this Plan.

  Lack of Parks. This area is underserved by city parks. At this time, only temporary private ballfields and greens exist. As the area continues to build

out as an employment area with housing anticipated nearby in the vicinity of Old Farm Road, this need will increase.

- **Support Services to Existing Business.** Following the establishment of several employment centers within this Quadrant – particularly at its southern extremities – there has been increased demand for support services such as restaurants and child care facilities in the area.

  How best to allow for support services to area employment centers while retaining the focus of retail and restaurant services in the Central District and Southwest Quadrant should be evaluated.

- **Types of Development/Balance with Central District.** The intent for the Northeast Quadrant is to provide opportunities for employers in need of larger amounts of space and which are compatible with the operation of the airport.

Transition Areas. Northeast Quadrant transition areas include:

- **Southeast Quadrant.** The interface of the Southeast and Northeast Quadrants forms an important bridge between areas of higher and lower intensity. These areas converge south of I-89 and along Hinesburg Road. The City's land development regulations should be evaluated to assess the transition between these areas.

- **Adjacent Residential Areas.** The Northeast Quadrant comes into contact with residential neighborhoods in a handful of key places, notably to the west and northeast of the Burlington International Airport, and with the handful of residential pockets within the Quadrant itself. Sufficient transition tools – in the form of lower intensity uses, buffering, or screening – should be provided to foster the continued compatibility of these areas. The same holds for undeveloped areas to the east of Old Farm Road.

Northeast Quadrant Objectives

Objective 52. Allow opportunities for employers in need of larger amounts of space, provided they are compatible with the operation of the airport.

Objective 53. Provide a balanced mix of recreation, resource conservation, and business park opportunities in the south end of the Quadrant, to include the conservation of open space resources, including riparian corridors along the tributaries of Muddy Brook and Potash Brook.

Northeast Quadrant Strategies

Strategy 117. Complete an analysis and determine whether to pursue a potential interstate interchange serving the area; revisit the City's Land Development Regulations to ensure that the future transportation network and future development potential of the area are consistent with one another.

Strategy 118. Review the City's Land Development Regulations so that land uses within the Quadrant remain consistent with the continued operation of the airport.

Strategy 119. Promote business use along Williston Road that makes use of available transit services.

Strategy 120. Promote the effective transition from rural residential and agricultural land uses along Old Farm Road to more dense housing and mixed uses in highly serviced areas along Kennedy Drive and Kimball Avenue. Such transition should incorporate interconnected greenways and forested open space.

Strategy 121. Encourage well planned, clustered, compact and infill business park development that integrates contiguous open space areas in business park design.

Strategy 122. Focus City resources in support of the build out of high density business and technology and mixed use centers to include City Center and the greater Tilley Drive – Technology Park – O'Brien Brothers – Meadowlands and adjacent properties development. Recognize this central area of the community as critical to the economic and employment growth of the City and work to encourage full build out of available capacity.

****

Southwest Quadrant

Areas Included. The Southwest Quadrant includes the entire Shelburne Road corridor as well as several neighborhoods on either side. It stretches from Lake Champlain on the west side, including Red Rocks Park and Queen City Park, Bartlett Bay, and Holmes Road neighborhoods, to Spear Street on the east side, including Swift Street, Allen Road, the Orchards, and Stonehedge, among others.

Current Land Use. The Southwest Quadrant is a diverse area of the City which includes several distinct – and, in some cases commingled – land uses. They include several long standing single- and multi-family neighborhoods, natural areas fronting Lake Champlain, light industrial areas, and commercial areas. The area is served primarily by Shelburne Road, but is also served by an active railway that parallels Shelburne Road.

The lakeward side of this quadrant includes several small residential neighborhoods - the Bartlett Bay area, Holmes Road area, Queen City Park and the Landings. Each of these include properties with lakefront access. Immediately adjacent to the Queen City Park neighborhood is Red Rocks Park, a 100-acre City-owned park with 4,700 feet of lake frontage. Only 700 feet of beach give access to the waters of the lake, since most of the park is on an elevated rocky promontory. The remainder of the lakefront property consists of private residential properties, including a handful of large lots. Bartlett Brook and Potash Brook join Lake Champlain in this area.

The Shelburne Road corridor consists predominantly of commercial uses, however, residential and industrial uses are mixed throughout the area. The roadway itself serves as the main north-south arterial through the State. A railway runs parallel to the road and serves as an approximate divider between the lakeward portion of the Quadrant

and the Shelburne Road section. In recent years, the north end of the corridor has seen significant redevelopment, in the form of mixed use housing and offices in the Farrell Street area. This area, well served by transit, retail, employment, and emergency services, won a Smart Growth award and is undergoing the final phases of redevelopment today.

To the east of Shelburne Road are several residential, mixed-use, natural, and park areas. The Orchards neighborhood was the first large-scale development to take place in the area, beginning in the 1950s. Subsequently, commercial enterprises blossomed along the length of Shelburne Road, with additional neighborhoods being added over time. South of the Orchards is the University of Vermont's Horticultural Farm, a research facility and community focal point. North and east of the Orchards are two municipal parks, Szymanski and Farrell.

Two community parks are located in this area: Farrell Park and Szymanski Park. Both provide amenities for local residents; Farrell Park additionally provides ballfields for wider use. These parks are further enhanced by East Woods, a permanently conserved parcel with walking trails open to the public, owned by the University of Vermont.

Towards the north end of the Quadrant, Swift Street is home to a mix of homes and businesses and serves as the principal roadway connection to Spear Street. At the south end of the Quadrant, Allen Road serves as the other principal connector and serves a mix of residential, commercial, and industrial uses.

Along Spear Street – the eastern boundary of the Quadrant – single family homes fronting the street itself are accompanied by several residential neighborhoods of single and multi-family homes accessed from Cedar Glen Road, Pheasant Way, and Deerfield Ave. The City-owned Overlook Park sits at the corner of Deerfield Avenue and Spear Street.

The Quadrant is generally well served by public transit, recreation paths, and services for residents, though areas along Spear Street are somewhat distanced in some cases and street connectivity, particularly east-west connectivity, is limited.

Future Land Use. The Shelburne Road corridor portion of the Quadrant is generally already developed with commercial and mixed use establishments, with the exception of some land reserved by private developers between the Lowe's/Hannaford's area and Shelburne Road. Therefore, growth will occur primarily as infill or conversion development. The City encourages mixed-use development in and along the corridor (e.g. mixed residential/commercial or mixed retail/office/restaurant) to encourage pedestrian movement, use of public transportation services, and shared parking opportunities. Retail uses in the corridor are intended to meet both local and regional shopping and employment needs.

While the entire corridor is planned for some mixing of uses, there are several subsections within it. The north end of the corridor in South Burlington has seen the most significant redevelopment to date and now includes several newer multi-family buildings amongst commercial areas. Future redevelopment in this area should be

consistent with the pattern established by this development and by the single and two-family home neighborhood behind parts of it.

South of I-189, the east side of the road includes the well established Orchards neighborhood as well as a series of relatively small commercial lots fronting on Shelburne Road. Continued reuse and redevelopment of these commercial areas should enhance pedestrian connectivity to residential areas while at the same time protecting them from encroachment. The west side of the road includes significantly larger lots and some existing multi-family housing. Mixed use development and redevelopment is encouraged in this area.

South of IDX Drive, the Shelburne Road corridor becomes predominately commercial on both sides, with collector streets leading to residential neighborhoods. These areas should be encouraged for infill development and redevelopment, with a continued focus on business opportunities.

In the lakefront portion of the Quadrant, residential and open spaces uses should continue to predominate, with opportunities for public access to the Lake. A recreation path should be established along the length of Lake Champlain in this area, and the addition of a second public park should be considered to complement Red Rocks Park.

East of the Shelburne Road corridor, future land use should remain principally residential, with the exception of the western ends of Swift Street and Allen Road. Future development should be encouraged to establish a consistent scale and transition from commercial to residential areas. Additionally, care must be taken to maintain and improve stormwater runoff in these areas, particularly in areas of steeper slopes.

The 2009 Cars to People project began to explore the possibility of developing a series of "nodes" of activity along Shelburne Road. This should be further examined as a means to support infill development and a land-use pattern that supports walkable environments and efficient transportation system.

Key Planning Issues. Key planning issues in the Southwest Quadrant include:

- **Balance of Local and Regional Traffic.** Shelburne Road (also known as US Route 7) is State owned and controlled and serves as the primary north-south travel route along Vermont's western corridor. As such, its traffic and use will remain both regional and local. These two purposes can be in conflict with one another, especially as it relates to pedestrian crossings and signal timing for cross-streets.

  The City supports the continued implementation of pedestrian crossings at intersections and has promoted the development of a parallel route, Fayette Drive, to serve local needs for access in support of Shelburne Road.

- **Conservation and Lakefront Access.** Several large properties remain along the border of Lake Champlain. In consideration of the future potential of these properties, the City should explore opportunities for public access to

the Lake and/or conservation of identified and connected natural resources in the area.

- **Railway.** The presence of the rail line in this district provides a significant long-term opportunity for the City. At present, the rail line has limited commercial use, and carries no passengers. Opportunities for passenger use, however, are under exploration at the state and Federal levels, including the connections of Burlington to Middlebury, Rutland, Bennington and Albany.

  Future land use in this area should take care to both continue to reserve space for direct rail access by some commercial properties, and to ensure that adjacent development is designed in such as way as to minimize the visual, noise, and other effects of a nearby railway line.

Transition Areas. Southwest Quadrant transition areas include:

- **Safe and Inviting Access to Shelburne Road from Adjacent Neighborhoods.** Despite its proximity to residential neighborhoods to the east and west, some development along Shelburne Road is not designed to encourage pedestrian access from these areas. Future development and redevelopment along Shelburne Road should accommodate both local and regional users.

Southwest Quadrant Objectives

Objective 54. Promote higher-density, mixed use development and redevelopment along Shelburne Road and foster effective transitions to adjacent residential areas.

Objective 55. Maintain Shelburne Road as a roadway for both regional and local circulation.

Objective 56. Improve local neighborhood connections on the east and west sides of the Shelburne Road corridor.

Objective 57. Promote and expand public access to Lake Champlain.

Objective 58. Support the ongoing agricultural use of the University of Vermont's Horticultural Farm and its other agricultural properties.

Objective 59. Provide for the continued viability and use of the Vermont Railway line while supporting the viability of residential neighborhoods.

Southwest Quadrant Strategies

Strategy 123. Development that is to occur on the west side of the Vermont Railway line should make use of public crossings.

Strategy 124. Review the City's Land Development Regulations in key transition areas: between the Southwest and Southeast Quadrants; between Swift Street and adjacent areas; between Allen Road and adjacent areas.

Strategy 125. Explore opportunities to create one or more "nodes" of concentrated development and public activity along the Shelburne Road corridor;

Strategy 126. Continue to foster principally residential and open space throughout the lakeward portion of the Quadrant; explore opportunities for compatible non-residential uses along the railway and the potential for a mixed-use waterfront.

Southeast Quadrant

The development and ultimate land use pattern in the Southeast Quadrant of South Burlington is of critical importance to South Burlington's future. Creating a balance between housing, complimentary land uses, and conservation, especially conservation of key natural communities and habitat features, will happen through continuous planning, public involvement, and the thoughtful use of the City's land acquisition funds and regulatory tools.

From 2001 through 2005, the Planning Commission embarked on a series of studies and plans that underpin this section of the plan. The findings and goals of the Open Space Strategy (2002), Ecological Assessment (2004), Bird Habitat Study (2004), and SEQ Concept Plan (2005), are embodied in the goals and objectives of this plan. Implementing these goals and objectives will ensure that the SEQ becomes a vibrant, ecologically healthy district over the long term. These studies and plans are incorporated into this plan by reference.

Land Use Setting. The Southeast Quadrant (SEQ) comprises 3,900 acres or 37% of South Burlington's land area, and is the focus of much of the City's future land use planning and land conservation efforts. For purposes of this chapter, the SEQ is bounded by Spear Street to the west, Interstate 89 to the north, the Muddy Brook to the east, and the Shelburne town line to the south. It includes all of the Southeast Quadrant zoning district, and portions of the Industrial-Open Space, Parks and Recreation, and Residential-2 zoning districts. Much of the SEQ still has a rural-agricultural atmosphere and there are magnificent views of the Green Mountains, Lake Champlain and the Adirondacks.

The SEQ, which has developed and changed substantially since the early 1990s, has a remarkable variety of land uses. It remains South Burlington's least developed and most open land use district. It is home to several significant natural areas, such as the Great Swamp and Cheese Factory Swamp, which include areas with largely intact natural communities; a patchwork of hay fields, pastures and early successional "old fields" reflecting the area's agricultural heritage; and several of the City's largest stands of hardwoods. It is also home to the Vermont National Country Club and roughly 900 homes, with another 600 homes in various stages of permitting.

Veterans Memorial Park, located at the district's far northwest end, is now home to two ice rinks and the City's largest concentration of recreation fields. This park has become an important community gathering place for the entire City, with its constant flow of activity and hub of recreation path connections.

Commercial uses in the residential portions of the Southeast Quadrant have declined in recent years, particularly with the closing of the area's last dairy farm in 2004. The Mill Market & Deli (formerly Chittenden Cider Mill), however, continues its retail operations and is a well known landmark and neighborhood store. Larger-scale commercial and light industrial uses in the far northeast of the district, within the Industrial-Open Space district, include Verizon, CBA, Dynapower, the Lane Press, and more recent office construction. The Ireland Quarry continues operations along the interstate near the Muddy Brook.

Natural Resources Setting. The SEQ's natural resources are among the City's finest environmental assets. Marked by a pair of distinct north-south ridges between Spear and Dorset Streets, and between Dorset Street and Hinesburg Road, the SEQ also contains the headwaters of Shelburne Pond, Monroe Brook, Bartlett Brook and Potash Brook, and a large swath of the Muddy Brook basin. These resources, particularly the natural communities, were documented in the 2004 report "Wildlife and Natural Communities Assessment of the Southeast Quadrant, South Burlington, Vermont" by Arrowwood Environmental (the "SEQ Assessment").

The six focus areas defined in the SEQ Assessment are summarized below, along with descriptions of other important natural resource characteristics of the SEQ:

- **Soils.** The SEQ's soils are characterized by a shallow depth to groundwater and moderate permeability, with many rock outcrops found throughout the area. The soil types are chiefly Vergennes and Covington clays with gentle slopes, which are classified as having moderately high agricultural potential.

- **Ridges and Watersheds.** Two north-south ridges define the watersheds in the SEQ. The first begins at Veterans Memorial Park, south of the interstate between Dorset Street and Hinesburg Road, and heads south to the City line. Water falling to the west of this ridge goes into Lake Champlain via Bartlett Brook and North Brook. The second ridge roughly parallels Hinesburg Road, and continues south to the City line. Water falling east of this ridge feeds into Muddy Brook and flows north to the Winooski River.

- **Natural Communities and Habitat Areas.** Within the SEQ, the SEQ Assessment determined that there are six distinct groupings of natural features that form unique habitat areas, each with different resource, aesthetic, and habitat values. These sub-areas, and their key values, are summarized below:

- **Muddy Brook Corridor.** The Muddy Brook corridor at the northeastern end of the SEQ includes the brook, its surrounding wetlands, and adjacent upland forest and early successional agricultural fields. The area has a high vegetative diversity, which along with the brook helps support habitat for a variety of wildlife including mink, muskrat, herons and fish. Noted natural community areas associated with the corridor include the Dubois Swamp, a flooded red maple-black ash swamp, and the Van Sicklen Woods, a 12-acre clay plain forest.

1. **Muddy Brook Basin.** The Muddy Brook Basin in the southeastern corner of the SEQ includes the brook, its associated wetlands, the adjacent farm fields and pastures, and nearby small woodlots. Field visits during the SEQ Assessment found evidence that this area is used by gray and red fox, mink, river otter, muskrat, and coyote, as well as by many hydrophilic birds. Ecologically, this area extends well beyond South Burlington into the adjacent areas of Williston, Shelburne and St. George.

2. **The Great Swamp.** The Great Swamp area is centered on a hardwood swamp on the ridge east of Spear Street. It includes upland forests, shrubby successional fields, and wetlands. The large Red Maple-Black Ash swamp, which is notable among other features for the lack of invasive species present within it, appears to be the "Higbee Swamp" that is referred to in a variety of historical scientific collections at the University of Vermont. Five rare plant species were found in this swamp near the turn of the last century. While these species are not likely to have persisted, the Great Swamp is perhaps the most intact and important natural community area within South Burlington.

3. **Spear Street Frontage.** The area east of Spear Street and west of the Great Swamp is a mix of small wooded areas, old agricultural fields, and shrubby and emergent wetlands. This area's key significance is that it acts as an ecological buffer between the Great Swamp and the more developed areas to the west.

4. **The Bowl.** This area, in the south-central portion of the SEQ, contains some of the most substantial concentrations of wetland and wildlife resources in the SEQ and has been the focus of the City's land conservation efforts since 2002. The large wetland complex called the "Cheese Factory Swamp" straddling Cheese Factory Road, and the mixed hardwood communities just north and west of the swamp, are key parts of this area. Field inventories during the SEQ Assessment found signs that the area is home to bobcat, gray and red fox, coyote, wild turkey, and numerous other animal and bird species.

5. **Wheeler Nature Park and Associated Lands.** The City-owned Wheeler Nature Park property just north of the SEQ zoning boundary was found during the SEQ Assessment to be an important haven for wildlife. It is comprised of a series of open spaces and small woodlots on the golf course, and other nearby properties, along with some old field areas and wetlands. The diverse combination and proximity of different wetlands, streams, hardwood forest, and old field areas makes this an important cluster of features that act as wildlife habitat.

- **Views.** The SEQ affords some of the City's most scenic views of the Adirondacks, Camel's Hump and the ridges and valleys stretching south to Shelburne Pond. The City has protected what are deemed to be the most important public views from existing and proposed public properties through the View Protection Overlay Zone (VPZ). Other significant views have been evaluated through the SEQ Concept Plan and most recently the 2014 South Burlington Open Space Report. Areas that should be protected through

height and site plan standards in the City's land use regulations and design guidelines have been identified.

- **Historic and Cultural Resources.** The SEQ contains many remnants of the City's agricultural heritage, including old barns, stone walls, hedgerows, and some of the City's very few structures eligible for listing on the National Register of Historic Places. The Old Stone House at the corner of Hinesburg and Van Sicklen Roads was renovated, greatly enhancing the visual quality of Van Sicklen Road. Conservation and adaptive reuse of these structures is important and should be encouraged where possible; staff assistance in seeking grant funding can be an important way of accomplishing this goal. Allowing an expanded use of the former Chittenden Cider Mill is intended, in part, to ensure longer-term preservation of the building as a historic and cultural resource.

Residential Land Uses in the SEQ. The past 10 years have seen a great deal of housing development in the SEQ and adjacent areas, ranging from large single-family houses to more densely-developed triplex units. The past five years have seen a marked trend towards duplex and smaller single-family units in the SEQ, where previously larger single-family homes made up most of the new housing supply.

Developments proposed during the SEQ planning process were showing a change back towards more single-family units. The lack of new single-family housing in Chittenden County was leading developers to propose more single-family housing and more new types of single-family, such as smaller "cottage" homes.

Residential Development Patterns and Densities. With the exception of a few very small subdivisions, new housing built in the SEQ since 1992 has been built under the zoning provisions that allow for an overall density of 1.2 housing units per acre, with the units built in a clustered manner at 4 housing units per acre. This clustering option has created a pronounced change in site development patterns, away from the standard, larger-lot developments like Butler Farms, Oak Creek or Ledge Knoll to a more compact pattern exemplified in Stonehouse Village.

With the completion of the SEQ planning process, there has been a strong interest in building neighborhoods at higher densities in order to conserve more of the SEQ's priority open space lands. The City's land use regulations do provide for the transfer of development rights between non-contiguous parcels. The SEQ Concept Plan was charged with evaluating whether and how to adjust the "sending" and "receiving" densities within the regulations to provide more incentive for this type of transfer to happen.

Affordable Housing in the SEQ. South Burlington's Comprehensive Plan recognizes that while the City has been a leader in the provision of affordable housing, very little has been built in the SEQ relative to other areas of the City. The very high cost of land in the SEQ, and the lack of access to public transit, and distance from available services, have limited the introduction of affordable housing into the SEQ. Nonetheless, affordable ownership units were included in Dorset Farms, and are

included in the proposed South Village project as well. The SEQ Concept Plan has evaluated how increased "buildable" densities might increase the opportunity for affordable housing as well.

Non-Residential Land Uses in the SEQ. While predominantly residential, the SEQ district also includes many non-residential land uses. These are found chiefly in the Industrial-Open Space (IO) Zoning District at the northeastern edge of the SEQ, but are also found at the Chittenden Cider Mill on Dorset Street, but throughout the district is a scattering of churches, schools, recreation areas, and home-based businesses.

Industrial Open Space District. The Industrial-Open Space zoning district was intended originally to provide land for high-quality, large-lot industries and offices whose buildings and operations are consistent with a location in an environmentally healthy and visually sensitive area adjacent to residential neighborhoods. Recently, there have been significant concerns about the suitability of this district for uses such as warehousing that generate significant truck traffic.

Institutional Land Uses. Institutional uses in the SEQ are varied and provide important visual focal points within this district. These uses include four churches, all located at the north end of the SEQ near the interstate. A private elementary school, The Schoolhouse, is located on one of the out parcels near the Dorset Farms subdivision.

The City's land uses in the district center on recreation and open space. Veterans Memorial Park is the City's main active recreation center and is located adjacent to the 100-acre Wheeler Nature Park. A network of unpaved walking paths has been developed through the Recreation Path Committee. Most recently, the City added the 40-acre Scott property in the center of the SEQ to its recreation lands.

The Vermont National Country Club. One of the most prominent features of the SEQ is the Vermont National Country Club, which began construction in 1996 and continues developing today. This 450-acre complex straddles Dorset Street and extends from Swift Street south to Nowland Farm Road. It includes 264 residential units, an 18-hole golf course that draws players from throughout Vermont, and a clubhouse complex overlooking the swath of wetlands and golf course stretching southwest from the ridge near Veterans Memorial Park. Development of this large and very visible section of the SEQ as a golf course has helped to keep wetland areas and some very attractive views open, but has also raised concerns and legal conflicts relating to the location of some associated residential areas.

Retail and Services in the SEQ. The sole remaining retail and service use in the SEQ is the Chittenden Cider Mill, which includes retail and a small-scale auto repair facility. It functions today as a local landmark and gathering spot for the SEQ. In light of the growth that has taken place and been proposed in the SEQ, the Planning Commission has carefully considered the need for retail services first articulated in the 2001 Comprehensive Plan. From both public input and the analysis performed in the SEQ Concept Plan, it is clear that there has been sufficient population growth

to warrant creation of a small retail and service sub-district in the SEQ. Such a district must be limited in size and type, respect and contribute to the quality of the surrounding neighborhoods, and utilize design features that contribute to the traditional, Vermont vernacular that characterizes the visual quality of the SEQ.

Agricultural Lands and Land Uses. Agricultural operations, from hay fields to dairy farming, have shaped the SEQ's landscape over the past two centuries and contributed greatly to its natural beauty. It has become clear that the economic prospects for traditional, larger-scale farming, especially dairy farming, have faded in the SEQ. The last two herds of dairy cows in the SEQ were sold in 2003 and 2004, leaving only hay fields and other limited operations in business. The planning discussion has shifted to new and emerging forms of agriculture that can thrive even in a suburbanizing environment.

A number of agricultural uses are continuing, however, in the SEQ and in adjacent areas of Shelburne. The Scott property conservation easement allows for continued haying and agricultural use. A farm developed as part of the South Village subdivision off of Spear Street serves as a drop-off location for the Intervale Food Hub membership program that aggregates food from dozens of Vermont farms. The farm at South Village grows about a dozen crops and has greenhouses. This type of farming use, as well as the community gardens found on Spear Street on the University of Vermont Wheelock Farm, can be an important part of the SEQ's visual character, quality of life and environmental health into the future.

Recreation Facilities in the Southeast Quadrant. It is clear that the population and housing growth in the SEQ will increase the need for recreation and open space opportunities, and the need for the City and developers to provide for these needs as development occurs.

Developed Recreation Areas. Veterans Memorial Park, with 220 acres of land, playing fields, playground equipment, and two hockey rinks, is one of South Burlington's "crown jewels" and a major community gathering place. It functions as a City-wide facility, but also as the closest park for most SEQ residents and, along with the Wheeler Nature Park, the "green lungs" of the City Center.

The very heavy scheduled use of Veterans Memorial Park's playing fields indicates that the park's capacity for providing active recreation space has been reached. Thus it is recognized in this plan, and detailed in the Recreation chapter, that the anticipated housing growth in the SEQ (including projects built since 2001 and those undergoing review) will necessitate acquisition of additional lands for active and passive recreation, as well as continued expansion of the recreation path system, to ensure that there are sufficient recreation areas within walking or biking distance of all SEQ neighborhoods. A near-term focus should be on providing new opportunities for active recreation, including soccer/playing fields and playground equipment.

Recreation Paths. The SEQ is increasingly well-served by recreation paths, and all new developments have incorporated extensive public recreation paths in their designs. In the summer of 2004, a section of the path was built on the east side of

Dorset Street stretching north from Midland Avenue. This will eventually connect to the new Chittenden Cider Mill development, forming a link all the way from the City Center to Midland Avenue. Construction of the South Village project eventually will provide a loop from Dorset to Spear Street.

The Recreation Path Committee has identified five priority improvements within or directly related to the SEQ district as its priorities for the area: (1) completing the path from Dorset Farms to Nowland Farm Road; (2) completing the connector from Midland Avenue to Allen Road and Spear Street through the South Village project; (3) extension of the path from Spear Street and Allen Road to Shelburne Road; (4) completing a path on the west side of Dorset Street from Swift Street north to the Faith Methodist Church; and (5) constructing a path along Van Sicklen Road from the Muddy Brook to the existing path terminus on Old Cross Road.

Natural Areas. The 100-acre Wheeler Nature Park is the City's largest natural area. This property includes areas of hardwood forest, ledge, and wetlands, and has been documented as one of the most important areas of wildlife habitat in the City. The City intends to maintain this as a natural area, with unpaved walking trails the only type of improvement to be constructed within the property.

The 2007 conservation of the Scott property provided a much-needed addition to the City's inventory of natural lands. It will be available for low-impact, non-motorized recreation activities such as hiking, biking and skiing. The Open Space Strategy focused on this area, "The Bowl," as a critical area of the SEQ for further natural area conservation. Ideally, a conserved network of natural areas and farmland with public walking paths will be created extending south to Shelburne Pond.

Acquired by the City in 2013, the 60-acre Underwood property includes open fields, woodlands, wetlands, and spectacular views. The City appointed a committee to develop a preferred vision for the plan, for which a report and related graphics were released in the spring of 2015. A management plan was identified as the next step, but has not yet been developed.

Public Safety. As development increases in the SEQ, the City must monitor the need for substations in the SEQ. Any new public building in the SEQ should include space for public meetings, as this has been sorely lacking in the SEQ.

Transportation Network. The provision of an integrated network of roadways, recreation paths, sidewalks and walking trails that balances the needs of SEQ residents, the City as a whole, and the City's natural environment is an ongoing challenge that requires thoughtful discussion, planning, and technical assistance. While automobile transportation will be the chief mode of moving through and around the SEQ for the foreseeable future, the City must recognize and plan for all modes of travel in a balanced way.

The main north-south routes through the SEQ have very different functions.

Spear Street acts as a quasi-rural corridor carrying substantial amounts of commuter traffic northbound into Burlington each morning. This has created difficulties for the local traffic, particularly the houses with driveways on Spear Street, between Allen Road and Swift Street. The corridor's open character is protected in some stretches by the University of Vermont's farm and natural area lands that flank the road in parts of South Burlington, particularly north of Swift Street through to Williston Road.

The Spear Street Corridor Study, completed in 2004, provided the City with a detailed series of recommended improvements intended to maintain Spear Street as a hybrid local and collector road that is able to carry the through traffic demand without creating a need for additional lanes. Citizens expressed a strong desire to keep Spear Street as a two-lane profile throughout South Burlington, while making improvements to the Spear and Swift intersection and providing better recreation path connections throughout.

Dorset Street functions more as a local collector roadway and carries far less commuter or through traffic in the SEQ than do Spear Street and Hinesburg Road. Dorset Street is likely to be affected by increased volumes of local traffic as more development occurs, especially in the SEQ. The very visible presence of important local landmarks such as Veterans Memorial Park, the water tank, the Vermont National Country Club golf course and club house, and the Mill Market and Deli right on Dorset Street make Dorset Street very much the "main street" of South Burlington, both in the SEQ and farther north in the City Center.

These visual features make it appropriate to bring new housing and other uses closer to Dorset Street, especially in the area south of Old Cross Road as identified in the SEQ Concept Plan, and to ensure that its profile enhances its use as a local "main street." This will require careful design review to ensure that new development contributes to the attractive visual quality that has been developing along Dorset Street.

Hinesburg Road (Vermont Route 116) is an important regional transportation corridor that carries an increasing amount of through traffic, including trucks, from Addison and southern Chittenden County north to Williston, South Burlington and Burlington.

The State has begun the formal scoping process, with the full support of Williston, for a full interchange at Hinesburg Road and Interstate 89. This is expected to reduce the use of Van Sicklen Road as a cut-over to Exit 12 in Williston, provide more direct airport access, and service the truck demand from the industrial parks north and south of the Interstate in both communities. And, while essential to the regional economy, the interchange will lead to increased through traffic on Route 116. Therefore, careful provisions for recreation path and pedestrian crossings and strict limits on new curb cuts through this corridor are essential.

East-West and Neighborhood Connector Roads: One of the most difficult issues for South Burlington has been the provision of east-west connector roads between Spear Street, Dorset Street, and Hinesburg Road, and provision of connections between adjacent subdivisions.

Despite the fact that a network of east-west roads has been shown on the City's Official Map and included in the Comprehensive Plan for over 40 years, at the present time, the only full connection between the north-south roads in the SEQ is Cheese Factory Road. Nowland Farm Road terminates at Dorset Heights; Swift Street terminates at the Village at Dorset Park; and Midland Avenue terminates within Dorset Farms.

The lack of east-west roadways means, effectively, that the SEQ presently has over 1,000 housing units and regional traffic moving through a farming community's roadway network. The lack of east-west connections increases travel times and miles traveled between, for example, Butler Farms and Village at Dorset Park, or Dorset Farms and Shelburne Road. When east-west and neighborhood connector roads are lacking, school bus routes and emergency service responses also are lengthened, and there is less physical connectivity between neighborhoods, creating an isolating development, transportation, infrastructure and social network in the SEQ.

The flip side of this discussion relates to the potential environmental impacts of new roadways on wetlands and other environmental resources, and the desire of many residents to have as little "through traffic" as possible able to drive through their neighborhoods. Proposed roadway connections between new and existing neighborhoods are a frequent source of conflict in the development review process, and, against the policy of the City, the DRB has in some cases allowed one-way or "emergency only" roadways as a way to allow projects to proceed.

Also, wetland regulations are often interpreted in a manner that considers connector roads an "unnecessary impact" or an easy way to reduce wetland impacts. This interpretation is often self-defeating from an environmental perspective, since it leads to greater vehicle miles traveled by new residents when neighborhoods do not connect to other neighborhoods and the street network.

One key issue where there has been increasing agreement on all sides is the need to design east-west and neighborhood connector roads with narrower profiles and other environmental design features, such as box or open-bottom culverts instead of pipes for wetland and stream crossings, narrower road profiles (especially at crossing points), wildlife-friendly landscaping, and other traffic-calming features. These approaches, which can be incorporated with the City's public service and roadway maintenance practices, should become "standard operating procedure" for new development in the SEQ.

With these issues in mind, the Planning Commission evaluated the planned cross-town roads on the Official Map in 2003 and proposed a series of amendments that were adopted by City Council in December, 2003. This Comprehensive Plan reaffirms that the remaining proposed roadways through the SEQ that are shown on the Official Map should be constructed.

Southeast Quadrant Objectives

Objective 60. Give priority to the conservation of contiguous and interconnected open space areas within this quadrant outside of those areas [districts, zones] specifically designated for development.

Objective 61. Maintain opportunities for traditional and emerging forms of agriculture that complement and help sustain a growing city, and maintain the productivity of South Burlington's remaining agricultural lands.

Objective 62. Enhance Dorset Street as the SEQ's "main street" with traffic calming techniques, streetscape improvements, safe interconnected pedestrian pathways and crossings, and a roadway profile suited to its intended local traffic function.

Southeast Quadrant Strategies

Strategy 127. Take an active role, through cooperative planning and projects, policy discussions, zoning, and land conservation, in promoting new or revitalized agricultural and other open space uses in the SEQ that can be compatible with residential neighborhood and village center uses.

Strategy 128. Create a village center and green for the SEQ along Dorset Street south of Old Cross Road.

Strategy 129. Participate in State proceedings to advance the City's position on open space, housing and agricultural use issues as they relate to soil classes.

Strategy 130. Maintain the present residential density of 1.2 dwelling units per gross acre of land as the basic limitation on the ultimate build out of the SEQ zoning district.

Strategy 131. Continue to allow limited neighborhood areas with a buildable density of between four and eight units per acre, using development rights transferred from areas in the SEQ designated for conservation or protection.

Strategy 132. Evaluate the allowable activities on the western portion of the Industrial-Open Space District and consider enabling the development of a residential neighborhood with density from transferred development rights from conserved properties in the SEQ.

Strategy 133. Revise the LDRs to ensure that all truck-intensive uses in the IO district are located a sufficient distance away from residentially-zoned lands to prevent adverse noise, air quality, light, and visual impacts.

Strategy 134. Review the general height limits and explore architectural design review to ensure that the proposed structures are consistent with the vernacular architectural styles and visual quality of the SEQ.

Strategy 135. Continue to work with Shelburne on strategies to create a conserved agricultural and natural area, with appropriate public access and paths, from Shelburne Pond and Pond Road north to the Cider Mill development, consistent with the goals of the Open Space Strategy.

Strategy 136. Work with the owners of major SEQ lands with agricultural use or potential to ensure the appropriate use of TDRs for land conservation, consistent with the objectives of this Plan, the SEQ Concept Plan and Open Space Strategy.

Strategy 137. Through the development review process, land conservation initiatives, and development of Zoning Map amendments for the SEQ, work towards the addition of supplemental conserved areas adjacent and connected to existing open space lands.

Strategy 138. Maintain measures in the LDRs and SEQ zoning map to ensure that open spaces in all developments affecting secondary natural areas be designed in a manner to ensure continued connectivity between other open spaces and the preservation of "stepping stone" or other pockets of important wildlife habitat.

Strategy 139. Consult the Arrowwood Environmental SEQ Environmental Assessment regarding environmental resources, conditions, and possible strategies for protecting wildlife habitat values through conservation, restoration and development.

D. Special Multi-District Issues

Several issues of land use cross the artificial designations of local planning areas and municipal boundaries. Three key themes – transportation / mixed use corridors, open spaces / wildlife corridors, and transition areas – are highlighted in the Future Land Use Map.

Core Area and Key Corridors Through Districts

Promoting continued infill development in the greater City Center district, Williston Road and Shelburne Road areas in a manner that is consistent with current or future transit use adds visual vitality, increases the commercial and residential options available to landowners and businesses, incorporates access management features such as shared parking and reduced curb cuts, and uses land efficiently.

Several key transportation corridors serve to both divide and stitch together neighborhoods and land use districts throughout the City. These include, notably, Shelburne Road, Williston Road, and to a lesser extent, Dorset Street and Kennedy Drive.

Future land use along each of these corridors should emphasize not only the need for traffic flow, but also for cross connections and pedestrian access. The specific challenges and opportunities for resolution are unique to each of these corridors, but the broad need to have these corridors serve both localized and wider City-wide and regional needs is consistent.

In addition to providing transportation accessibility, these corridors provide opportunities for the City to advance multiple key goals related to efficient use of land, affordability, land conservation, and efficiency of municipal services. These goals can be advanced by supporting development and redevelopment patterns that focus on high quality, higher density land use than elsewhere in the City. Greater intensity of land uses along these corridors will foster greater use of transit along existing routes, relieve pressure for development in other areas of the City, and provide residents with support services within walking distance. All of these will help support the overall affordability of housing in the area.

Open Spaces and Wildlife Corridors

South Burlington is connected together by multiple types of networks – streets, recreation paths, water and sewer infrastructure, and natural areas.

Land use includes planning for both conservation and development. For natural areas, connectivity is critically important. The City of South Burlington includes several natural corridors. In most cases, these relate closely to water features due to the increased wildlife activity that generally accompanies these features.

In South Burlington, the following natural area corridors cross through the City. Some, such as those in the Southeast Quadrant and along parts of the Potash Brook's main reach, have been closely studied, while others have only been broadly identified.

- Southeast Quadrant Wildlife Corridors – see the Southeast Quadrant Detailed Chapter.
- Muddy Brook Corridor
- Bartlett Brook Corridor
- Centennial Brook Corridor
- Potash Brook and Red Rocks Park Corridor
- Winooski River Corridor

Energy Facility Siting

South Burlington recognizes that there may at times be competing goals. While the City supports the harnessing of renewable energy, particularly in the case of solar arrays, it must consider the impacts of such structures on open spaces and wildlife corridors. As such, this plan shall serve to provide guidance as to where the siting of renewable energy facilities should be avoided in favor of certain conservation areas:

- All Primary Conservation Areas identified per the map included in the 2014 South Burlington Open Spaces Report.
- Uncommon Species, Habitat Blocks identified per the Secondary Conservation Maps included in the 2014 South Burlington Open Spaces Report.

3.3. Compatibility

Through reciprocal cooperation with neighboring towns, regional agencies and entities with regional influence, the city plans to promote economical and efficient administration of certain public services including water supply, fire and police protection, transportation, parks, water quality improvement, and waste disposal. In addition, the city recognizes its role within a larger regional context and shall plan in cooperation with neighboring municipalities and other towns in the region.

The development of the South Burlington Comprehensive Plan involved consideration of compatibility with the plans of adjoining municipalities and the region. The proposed plans of adjoining municipalities and the CCRPC were consulted and discussions were held with municipal and regional staff planners.

The South Burlington Comprehensive Plan is compatible with the plans of adjoining municipalities and the CCRPC. As South Burlington implements its plan, adjoining municipalities will be consulted and invited to comment on projects and studies which may affect an adjoining town or city. The following is a brief municipality-by-municipality assessment for compatibility:

City of Burlington

The Burlington Municipal Development Plan, last adopted March 31, 2014, includes the following:

"Geographically, Burlington is only a small part of the surrounding region, and has no extraterritorial authority over land use and development in adjoining communities. Responsibility and ability to reverse this trend of suburbanization lies therefore with each nearby community, and our willingness to collaborate together as a region on land use and public investment issues."

The City of Burlington's Land Use Plan includes planned Neighborhood Activity Centers near its boundaries with South Burlington along Shelburne Road as well as along Grove Street (which become Patchen Road in South Burlington). Both are listed as areas for carefully planned, resource and neighborhood sensitive centers for growth and development. The same holds for the City of Burlington's Institutional Core Campus district, including the areas home to the University of Vermont principal campus and University of Vermont Medical Center.

The cities also share boundaries along Spear Street, in the Eastwoods neighborhood, with Red Rocks Park, and in the Burlington South End.

South Burlington Comprehensive Plan's Future Land Use Map is generally consistent with those of the City of Burlington: Low Intensity to lower density areas, Medium and Higher Intensity to similar classifications on the Burlington side.

In addition to Future Land Use, the Cities of Burlington and South Burlington collaborate on numerous fronts, including but not limited to emergency response, Airport planning & operations, the University of Vermont & Champlain College, transportation corridors, and regional events such as the recent triathlon championships.

The Plans for these two communities are compatible.

Town of Shelburne

The Shelburne Comprehensive Plan, adopted February 25, 2014 and amended September 23, 2014 includes two future land use districts bordering the City of South Burlington: "Growth Area 2" from Lake Champlain to Spear Street and "Rural Sub-Area" from Spear Street to the Muddy Brook. Growth Area 2 is further separated, along its boundary with South Burlington, into the "Mixed Use Sub-Area" and the "Residential Sub-Area."

Objectives contained within the Plan:

"Create a true mixture of residential and commercial development in the Mixed Use Area along Shelburne Road north of the Village area. This should range from apartments above commercial uses to various types of residential structures linked with and integrated into the commercial developments. Commercial uses should be oriented towards local and sub-regional markets (e.g. drug stores, hardware stores, neighborhood stores."

"In the residential parts of Growth Area 2, encourage development of pleasant, compact neighborhoods."

"The area outside of Shelburne's Growth Area is designated as the Rural Area. It is the Town's policy to discourage development in the rural area in favor of development in the Growth Area." "While some development is anticipated in the Rural Area, it should be limited, of low density, and should give very high priority to identifying and preventing undue adverse impacts to the area's scenic and natural features and resources."

The Town's Growth Area 2 is aligned with the City's Future Land Use map, with Higher Intensity along Shelburne Road and Low Intensity along the Lake and nearer to Spear Street. The objectives for each are closely aligned.

The Town's Rural Sub-Area is adjacent to areas listed as Very Low Intensity and Low Intensity. Both communities have placed strong emphasis on natural resource conservation and have in fact collaborated on the acquisition of land for conservation and agricultural purposes. The approaches to land conservation and integration with housing demands differ slightly, as the City uses a Transferable Development Right program which does allow for compact development in specific areas that are accompanied by Natural Resource conservation areas along wildlife, wetland, stream, and agricultural corridors. While the approaches differ, the broad goals and intent are largely compatible.

The City and Town collaborate on multiple fronts, including emergency response, administration, natural resource conservation, and water quality.

The Plans for these two communities are compatible.

Town of Williston

The Town of Williston last adopted its Town Plan on October 3, 2011. The Town, via the Muddy Brook, forms the entire western boundary of South Burlington, from near Shelburne Pond to the Winooski River.

The two communities' Future Land Use plans are consistent along the boundary. Both promote natural resource conservation south of I-89 (Agricultural/Rural Residential in Williston) and include lands for commercial / light industrial activity north of I-89 (Industrial West).

"3.2 Rural Williston- The Town of Williston will maintain a rural character outside the sewer service area, and protect open space resources, including productive agricultural lands, open meadows, ridgelines, riparian corridors and wetlands, view corridors, and wildlife habitat."

The bordering area in South Burlington are largely identified for Very Low Intensity. The one exception is immediately south of I-89, where a quarry operates in South Burlington (Medium-Higher Intensity in South Burlington) and is accessed via Williston. The Town has a specific agreement with the quarry for access and operation.

"3.3 Industrial Lands – The Town of Williston will continue in its role as an industrial center and the site of the proposed regional landfill. The policies adopted here facilitate continuing industrial use with bylaw amendments and permitting of the landfill." Additional goals related to transportation improvements and to close examination of zoning related to the shift in uses towards warehousing, distribution and offices are presented.

The bordering area in South Burlington is listed as Medium-Higher and is complimentary. The Muddy Brook corridor to the north is labelled as Very Low Intensity due to its floodplains.

The City and Town are connected by three bridges, along National Guard Road north of the Airport (largely unpaved), US Route 2, and Van Sicklen Road.

The City and Town collaborate on numerous fronts, including emergency response, transportation corridors, and administration. The Plans for these two communities are compatible.

Town of Colchester

The Colchester Town Plan was last adopted on April 8, 2014. The two communities share a small portion of the Winooski as a municipal boundary and are connected by the Lime Kiln Bridge.

Vermont Route 15 and St. Michael's College are the predominant land use features on the Colchester side of the bridge, while multi-family housing transitioning to light industrial uses and Airport are located on the South Burlington side.

The Town, via agreement, has an allocation from the Airport Parkway Wastewater Treatment Facility.

Future Land Use on the South Burlington side is listed as Medium Intensity. The Colchester Plan labels this area as Village Mixed Use, described as follows: "These are primarily existing developed areas and future development is meant to be compatible with the existing diverse mix of uses. Additional infrastructure will generally not be required to support desired levels of growth and density with the exception of the Exit 17 neighborhood. Uses appropriate for village mixed use include small office, restaurant, small retail, agriculture, and many businesses integrated into neighboring residential uses. Appropriate industrial uses should be conditioned on their ability to fit with neighboring uses. Although Planned developments (PUD, PRD), multi-family and higher residential densities are to be encouraged, lower densities such as R-1 and especially R-2 are also compatible in village mixed use areas."

The City and Town continue to collaborate on a range of subjects including wastewater, administration, transportation, and emergency response. The Plans for these two communities are compatible.

Town of Essex

The Essex Town Plan was last adopted on March 1, 2011. The two communities share a portion of the Winooski as a municipal boundary but have no land or bridge connections.

The boundary is largely floodplain on both sides of the River. The City and Town share similar and comparable goals for watershed and floodplain conservation. The Plans for these two communities are compatible.

Village of Essex Junction

The Village of Essex Junction Comprehensive Plan was last adopted on August 26, 2014. The two communities share a portion of the Winooski as a municipal boundary but have no land or bridge connections.

The boundary is largely floodplain on both sides of the River. The City and Town share similar and comparable goals for watershed and floodplain conservation. The Plans for these two communities are compatible.

City of Winooski

The Winooski Municipal Development Plan was re-adopted from its 2009 version on April 21, 2014, with the additional of 10 General Principles.

The two cities share a portion of the Winooski as a municipal boundary but have no land or bridge connections.

Winooski's Plan notes" "A significant amount of land along the Winooski River is classified as floodplain; this floodplain is broken down into the floodway, the 100-year and 500-year zones, the boundaries of which can be seen on floodway and flood insurance rate maps prepared by the Federal Emergency Management Agency. Land use within flood-prone areas is restricted through zoning."

The boundary is largely floodplain on both sides of the River. The City and Town share similar and comparable goals for watershed and floodplain conservation. The Plans for these two communities are compatible.

Chittenden County Regional Planning Commission (CCRPC)

South Burlington is located at a core central location within Chittenden County. Immediately adjacent to the State's largest City on two sides, bisected by I-89, and home to the Burlington International Airport, the City of South Burlington is a principal center for people to live, work, and recreate.

The CCRPC's June 19, 2013 Regional Plan, or ECOS, outlines a broad range of goals and strategies. Among these is a principal goal to: "Strive for 80% of new development in areas planned for growth, which amounts to 15% of our land area." The ECOS Future Land Use Map is closely aligned with the City's Future Land Use Map, with areas labelled as "Center" in the ECOS Plan aligned "Higher Intensity", Enterprise designation lined up with Medium-to-Higher Intensity – Primarily Non-Residential, and the Rural, Suburban, and village designations closely paralleling the Very Low Intensity, Low Intensity, and Medium Intensity areas.

The South Burlington Comprehensive Plan, further, has been reviewed by the CCRPC's Planning Advisory Committee for consistency with Vermont's required Plan Elements and Statewide Planning Goals, including consistency with the Regional Plan, and found to be in accord.

4: References and Resources

4.1 The Maps

Map 1: Current Land Use

Map 2: Build Out Analysis

Map 3: Water Resources

Map 4: Sanitary and Water Systems

Map 5: Road Class and Transit Routes

Map 6: Recreation Paths and Trails

Map 7: Primary Conservation Areas

Map 8: Secondary Conservation Areas

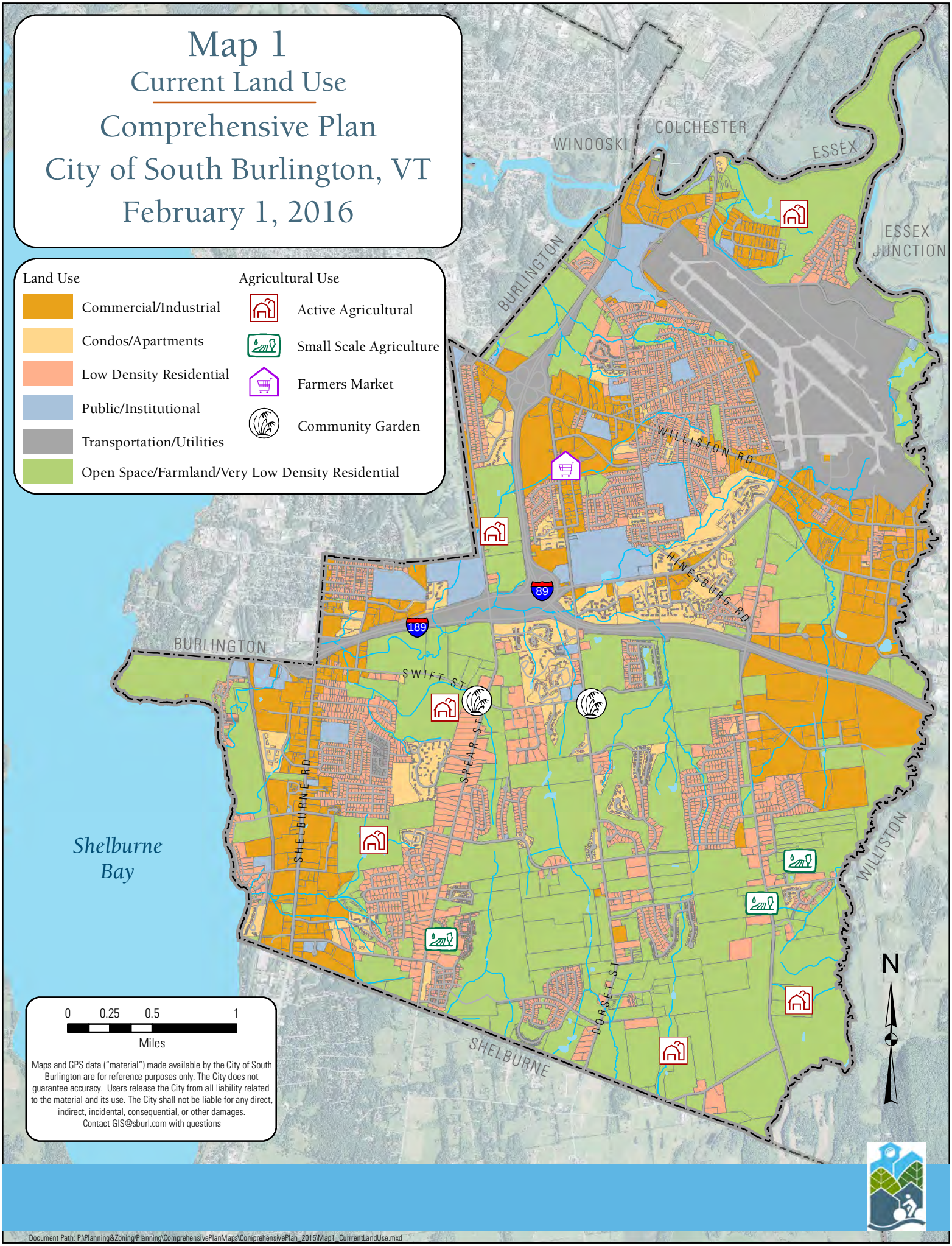
Map 9: Community Facilities

Map 10: Planned Infrastructure Improvements

Map 11: Future Land Use

Map 12: Land Use Planning Areas

Map 1
Current Land Use
Comprehensive Plan
City of South Burlington, VT
February 1, 2016



Map 2

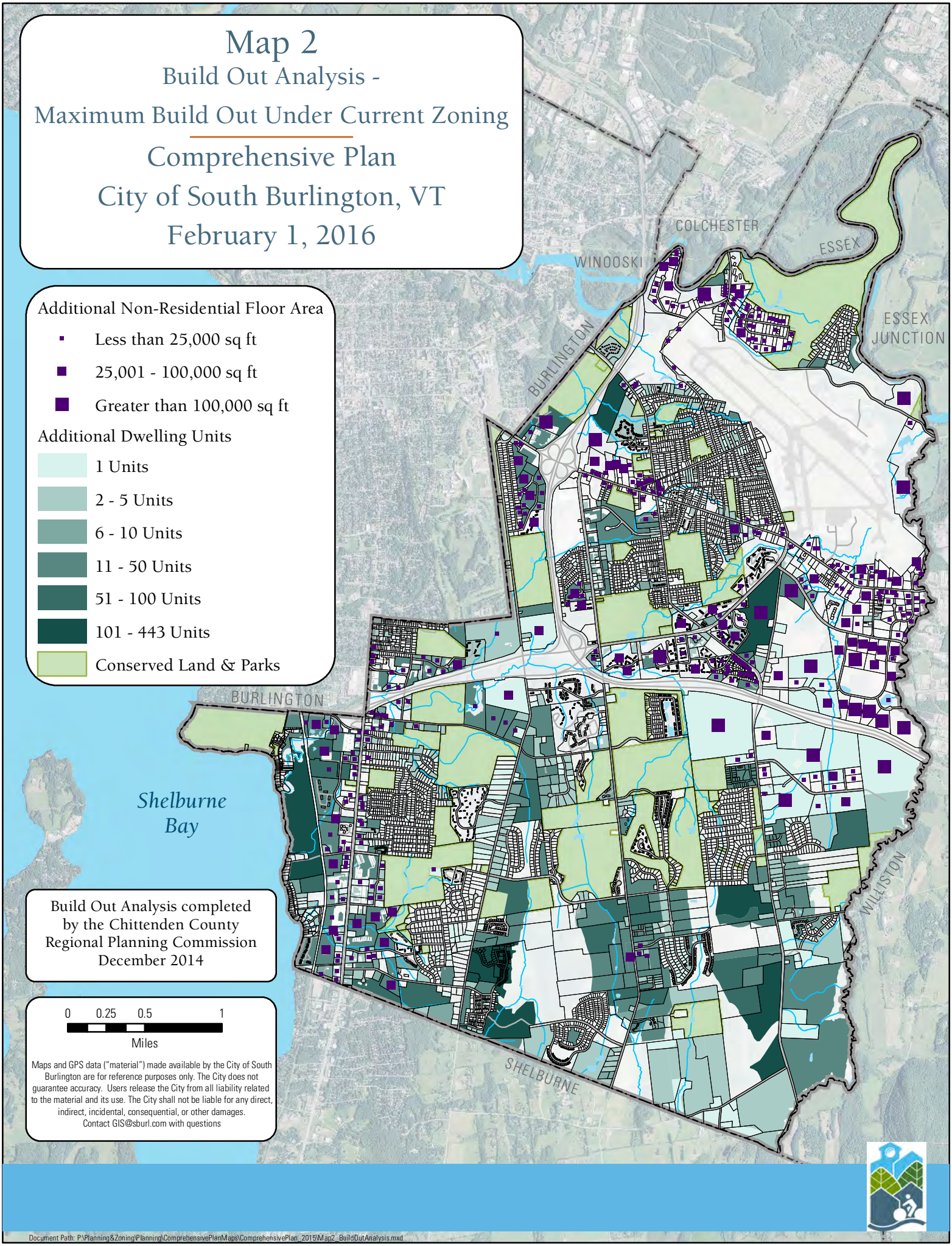
Build Out Analysis -

Maximum Build Out Under Current Zoning

Comprehensive Plan

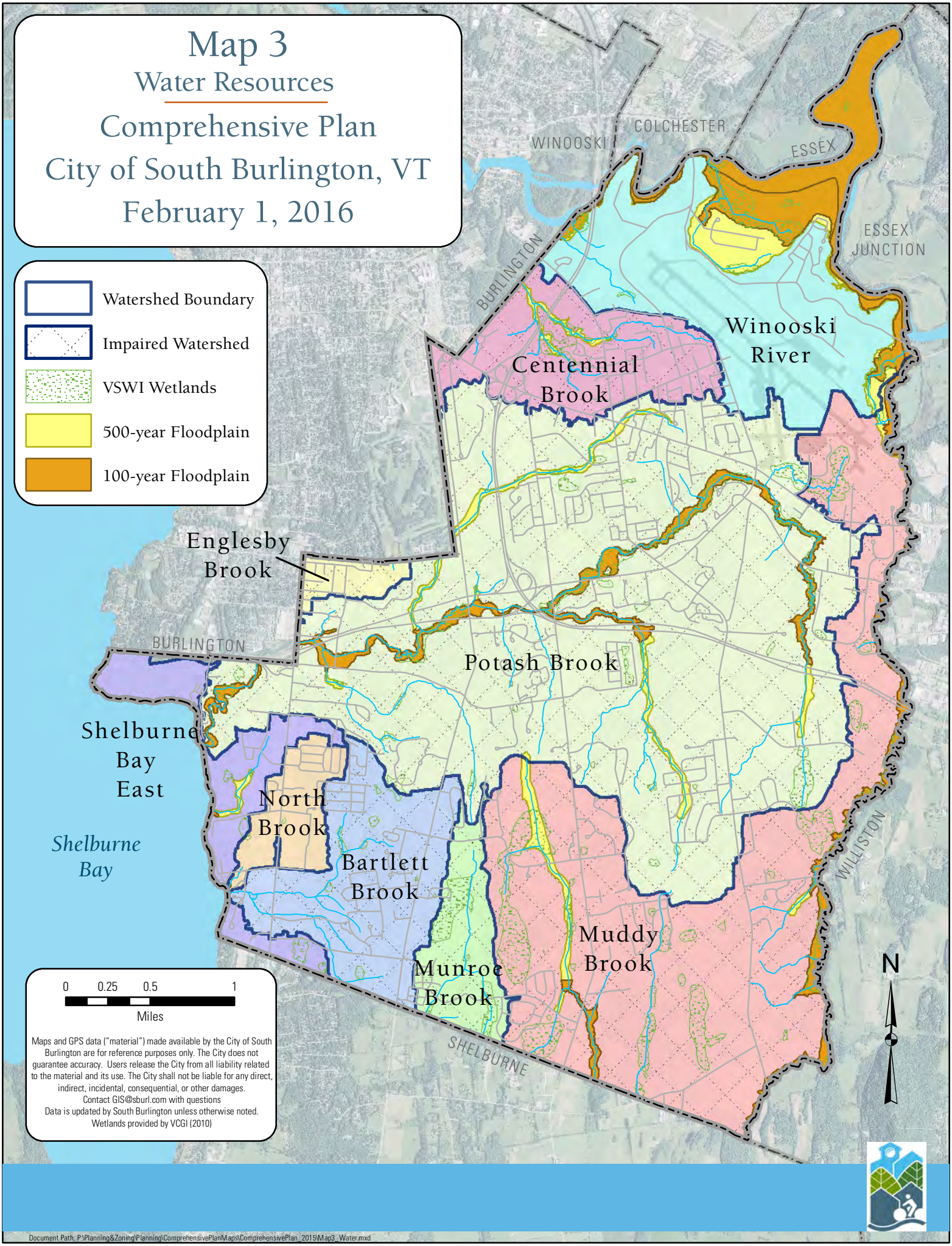
City of South Burlington, VT

February 1, 2016



Document Path: P:\Planning&Zoning\Planning\ComprehensivePlanMaps\ComprehensivePlan_2015\Map2_BuildOutAnalysis.mxd

Map 3
Water Resources
Comprehensive Plan
City of South Burlington, VT
February 1, 2016



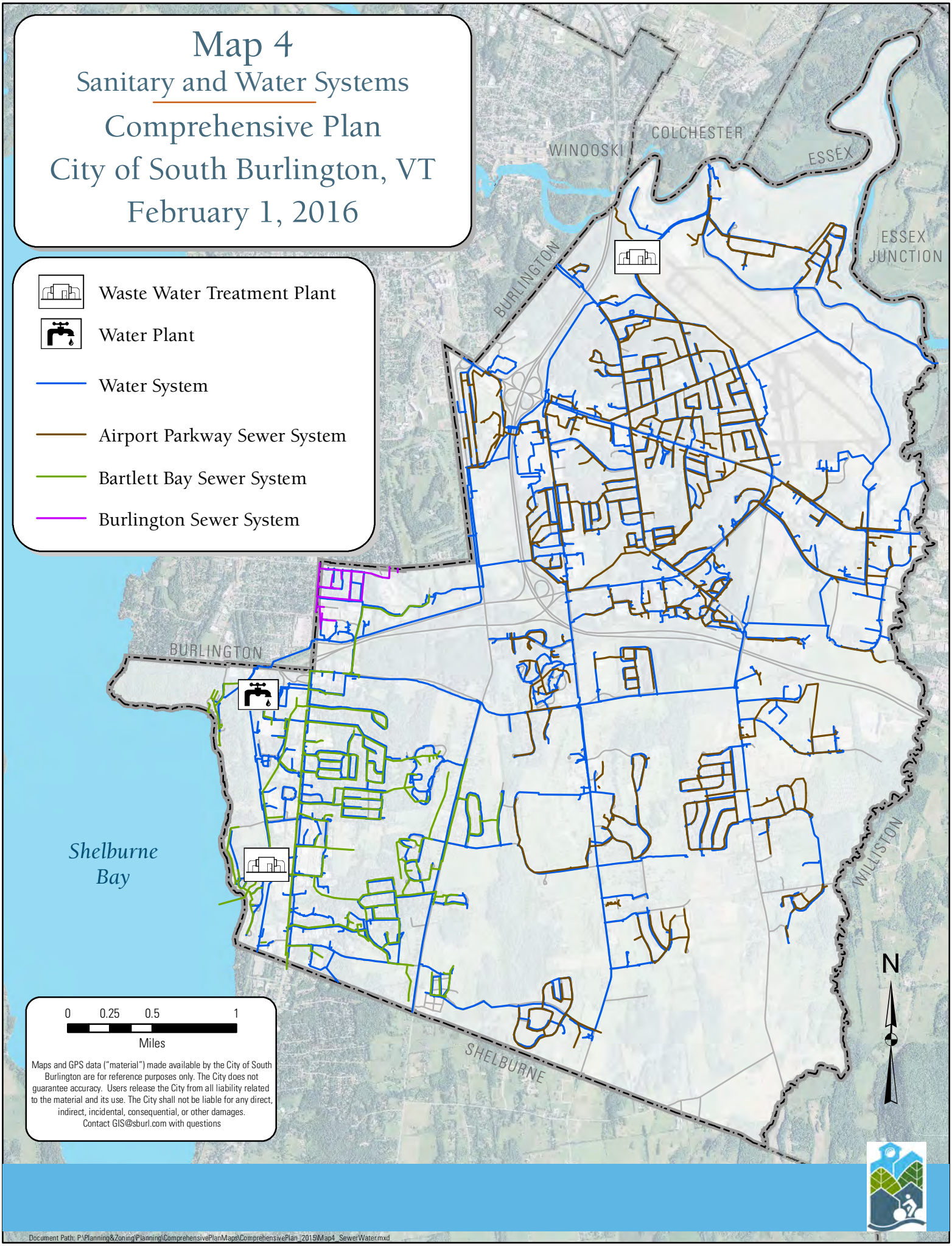
Map 4

Sanitary and Water Systems

Comprehensive Plan

City of South Burlington, VT

February 1, 2016



Maps and GPS data ("material") made available by the City of South Burlington are for reference purposes only. The City does not guarantee accuracy. Users release the City from all liability related to the material and its use. The City shall not be liable for any direct, indirect, incidental, consequential, or other damages. Contact GIS@sburl.com with questions

Document Path: P:\Planning&Zoning\Planning\ComprehensivePlanMaps\ComprehensivePlan_2015\Map4_SewerWater.mxd

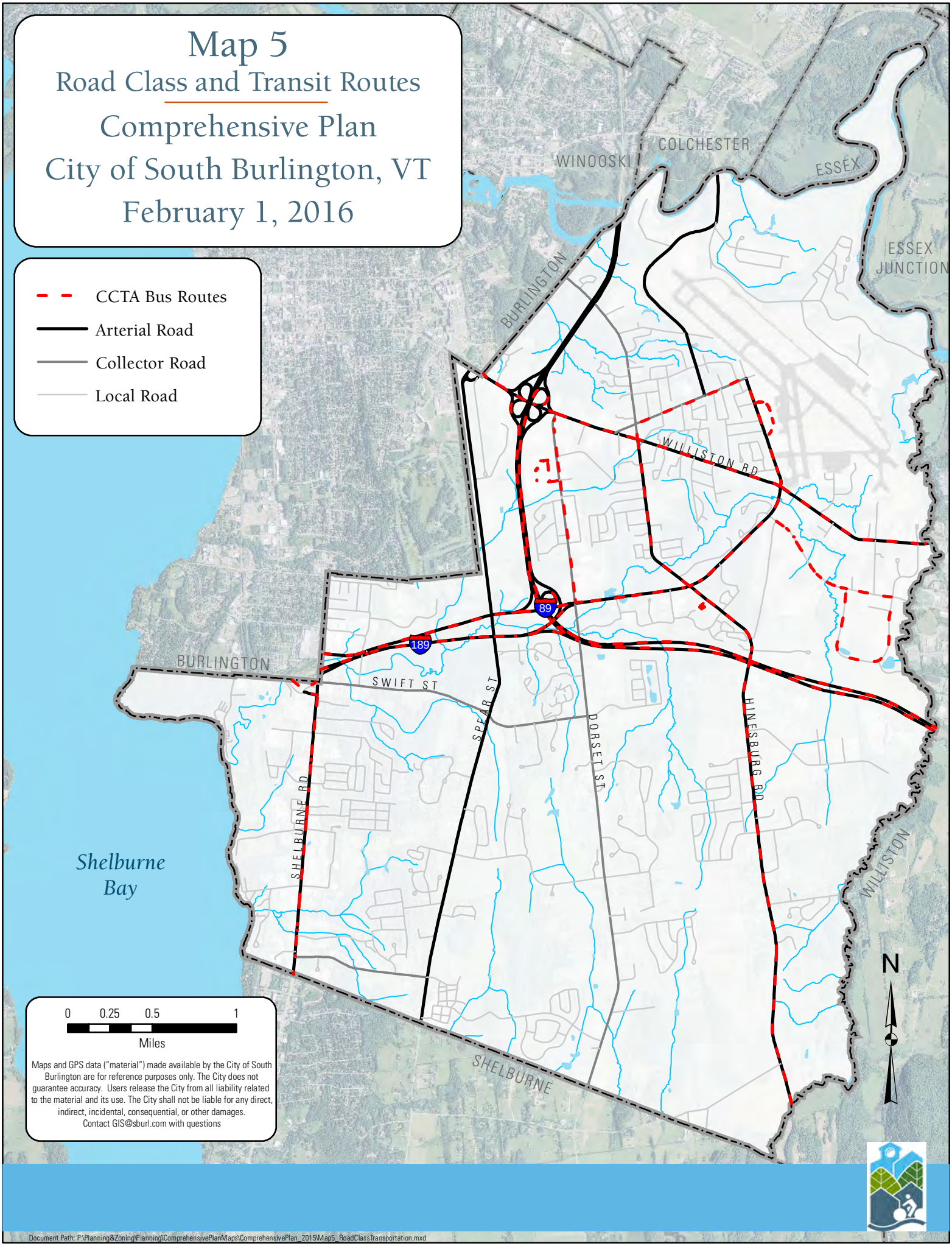
Map 5

Road Class and Transit Routes

Comprehensive Plan

City of South Burlington, VT

February 1, 2016



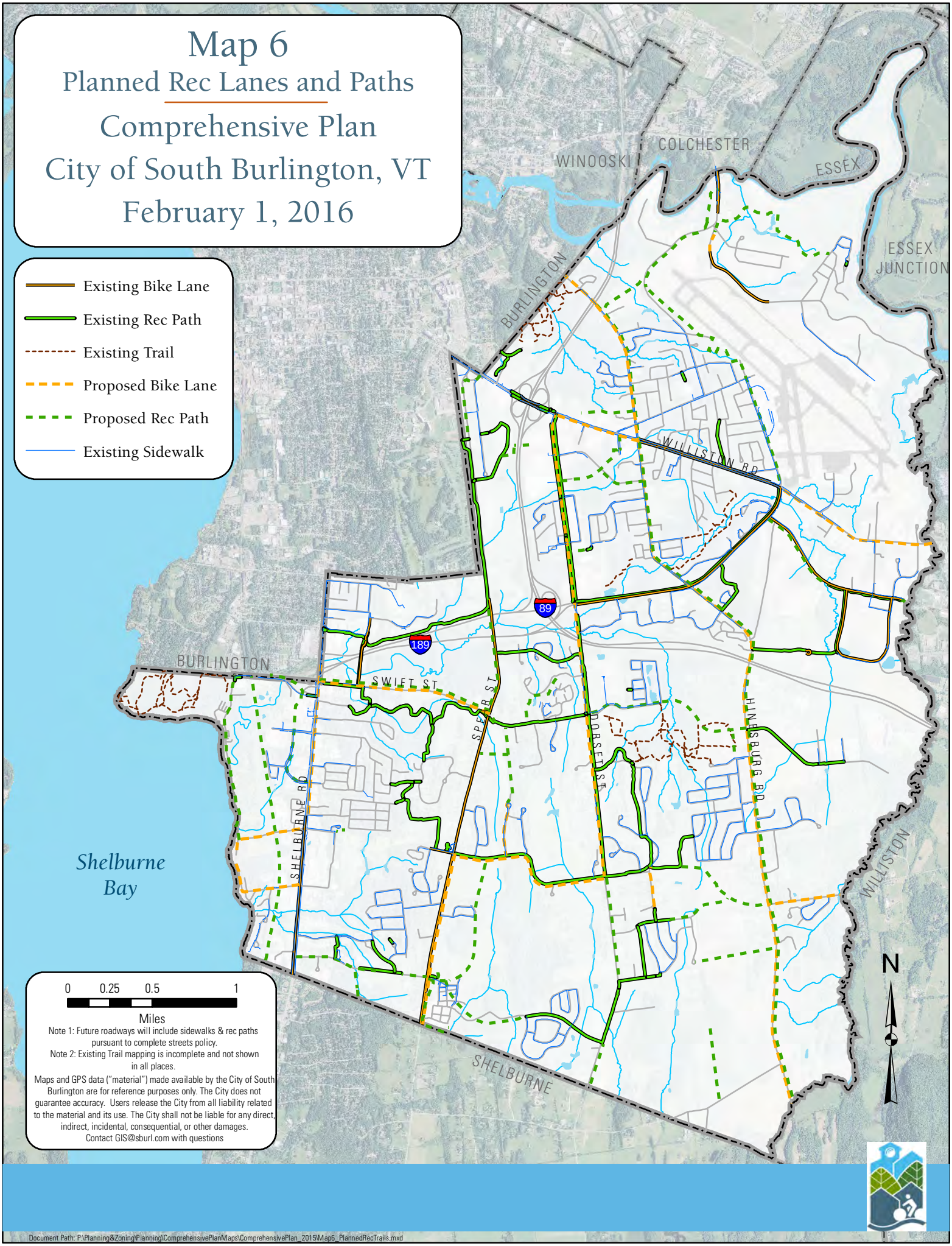
Map 6

Planned Rec Lanes and Paths

Comprehensive Plan

City of South Burlington, VT

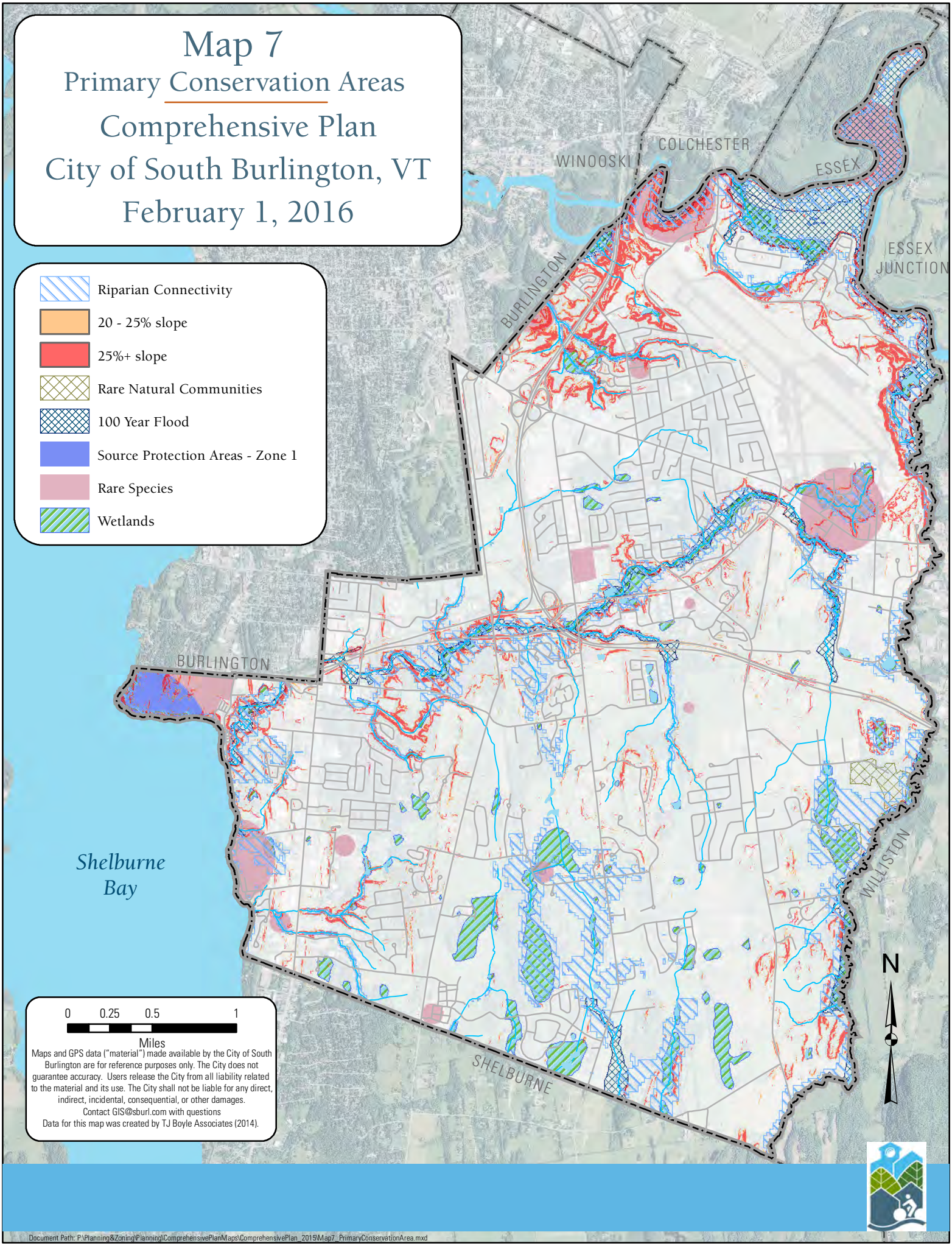
February 1, 2016



Note 1: Future roadways will include sidewalks & rec paths pursuant to complete streets policy.

Note 2: Existing Trail mapping is incomplete and not shown in all places.

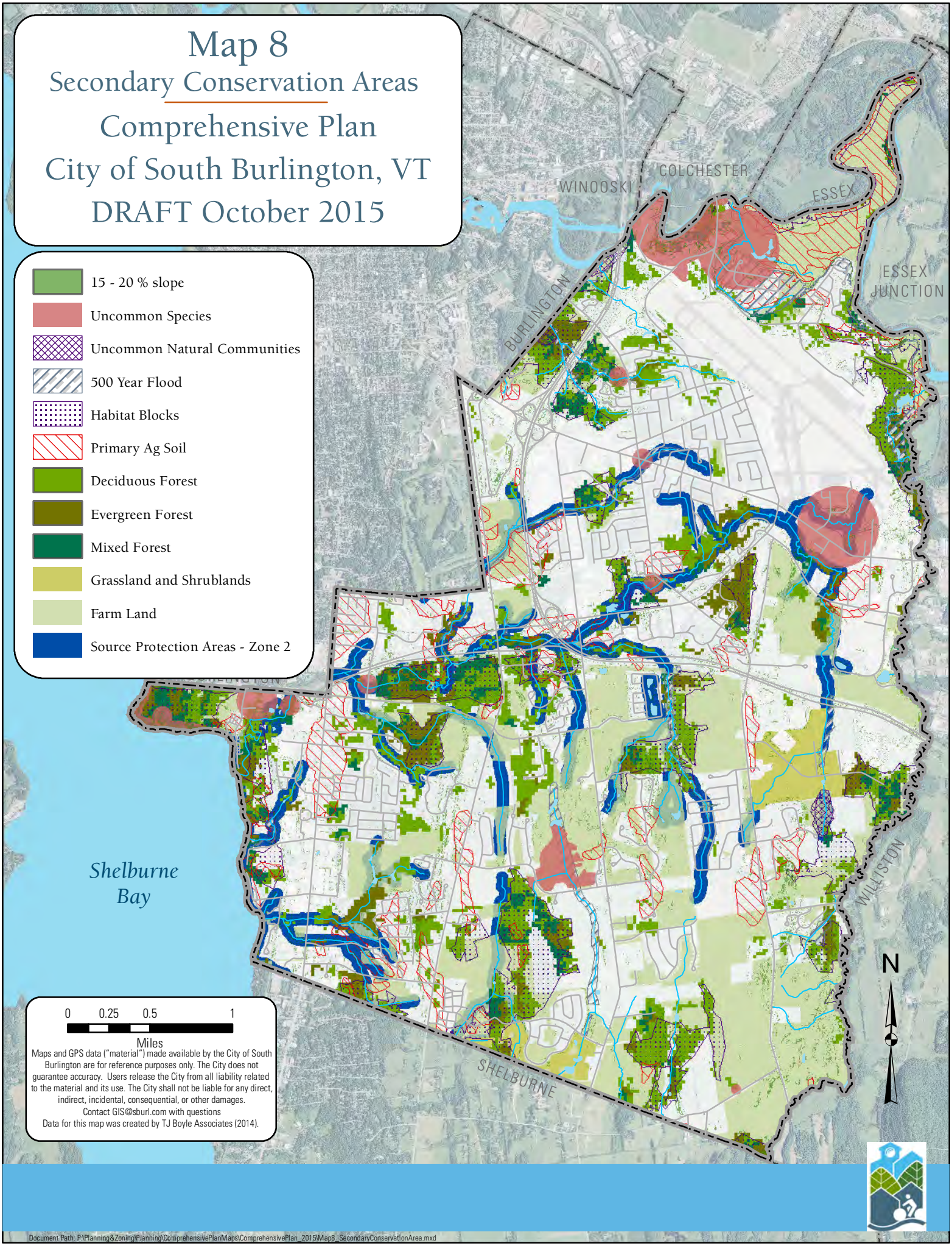
Map 7
Primary Conservation Areas
Comprehensive Plan
City of South Burlington, VT
February 1, 2016



Maps and GPS data ("material") made available by the City of South Burlington are for reference purposes only. The City does not guarantee accuracy. Users release the City from all liability related to the material and its use. The City shall not be liable for any direct, indirect, incidental, consequential, or other damages.
Contact GIS@sburl.com with questions
Data for this map was created by TJ Boyle Associates (2014).

Document Path: P:\Planning&Zoning\Planning\ComprehensivePlanMaps\ComprehensivePlan_2015\Map7_PrimaryConservationArea.mxd

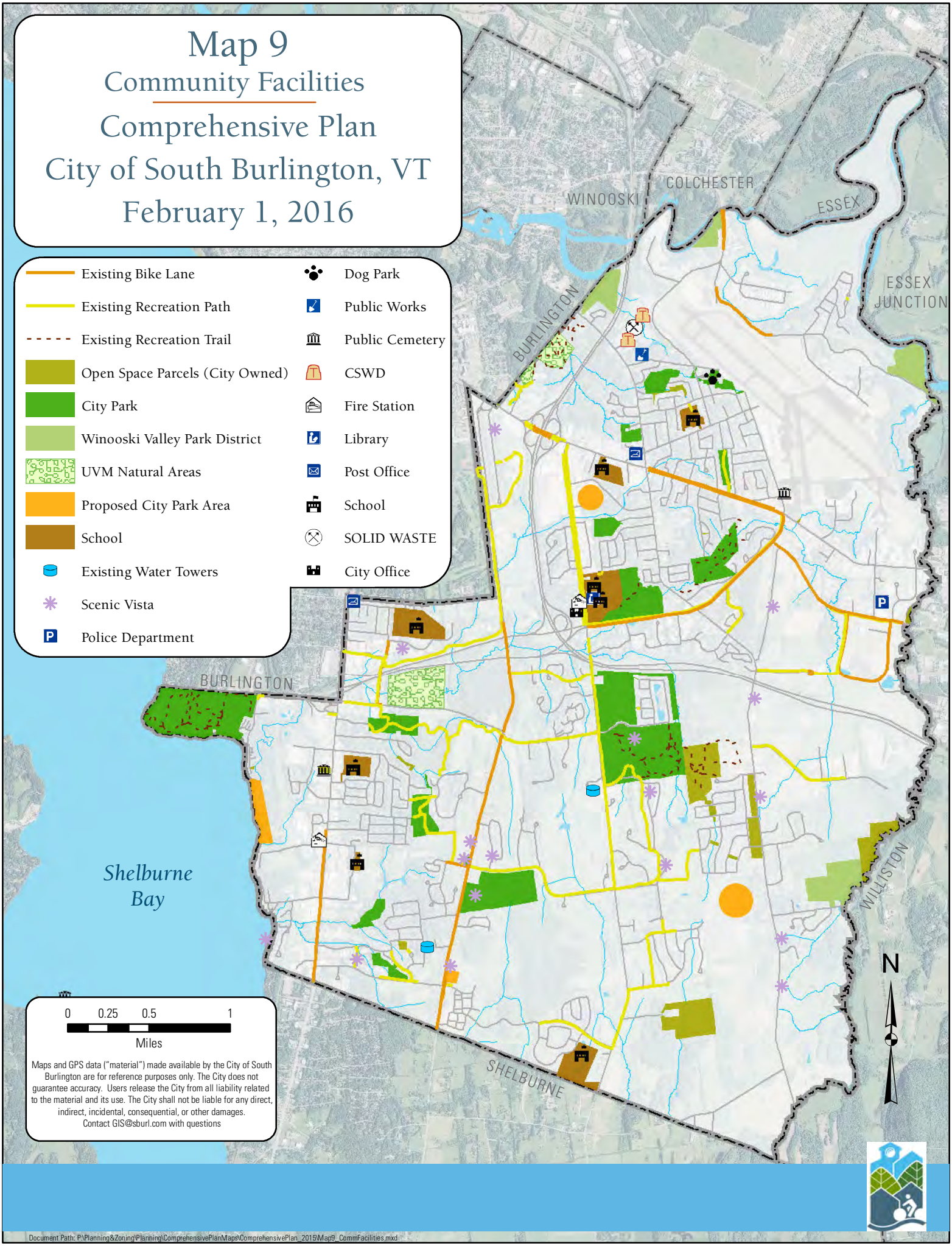
Map 8
Secondary Conservation Areas
Comprehensive Plan
City of South Burlington, VT
DRAFT October 2015



Maps and GPS data ("material") made available by the City of South Burlington are for reference purposes only. The City does not guarantee accuracy. Users release the City from all liability related to the material and its use. The City shall not be liable for any direct, indirect, incidental, consequential, or other damages.
Contact GIS@sburl.com with questions
Data for this map was created by TJ Boyle Associates (2014).

Document Path: P:\Planning&Zoning\Planning\ComprehensivePlanMaps\ComprehensivePlan_2015\Map8_SecondaryConservationArea.mxd

Map 9
Community Facilities
Comprehensive Plan
City of South Burlington, VT
February 1, 2016



Maps and GPS data ("material") made available by the City of South Burlington are for reference purposes only. The City does not guarantee accuracy. Users release the City from all liability related to the material and its use. The City shall not be liable for any direct, indirect, incidental, consequential, or other damages. Contact GIS@sburl.com with questions

Document Path: P:\Planning&Zoning\Planning\ComprehensivePlanMaps\ComprehensivePlan_2015\Map9_CommFacilities.mxd

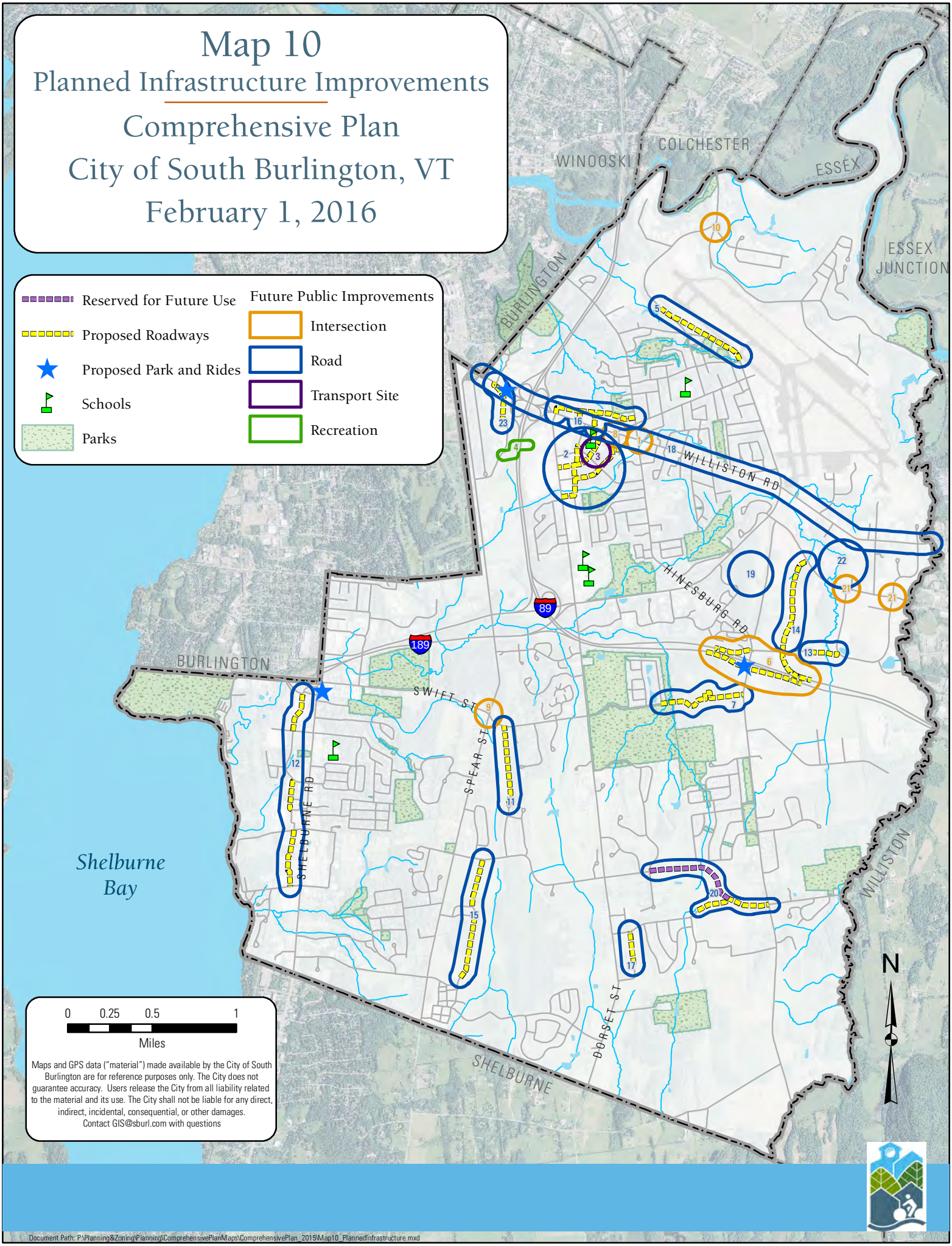
Map 10

Planned Infrastructure Improvements

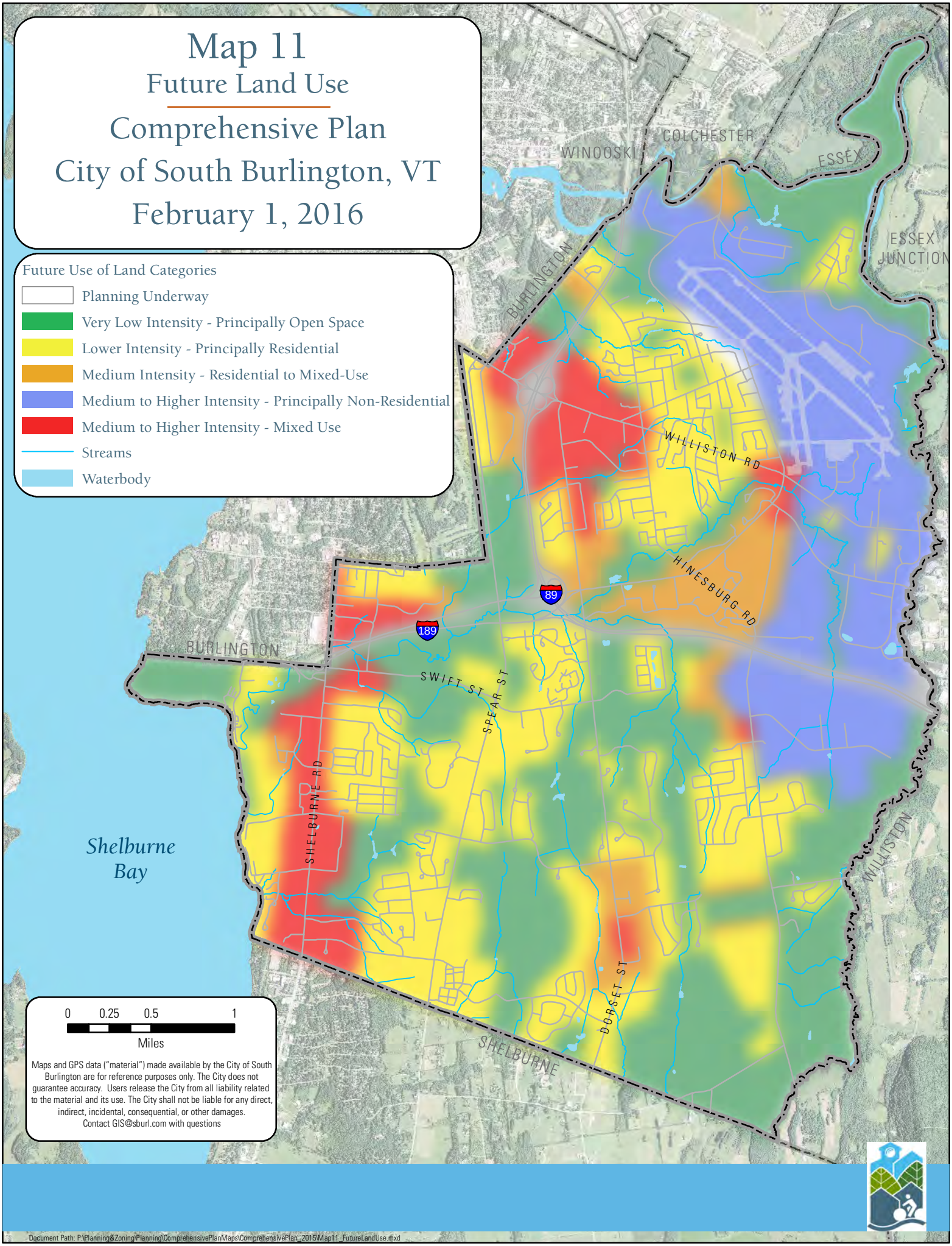
Comprehensive Plan

City of South Burlington, VT

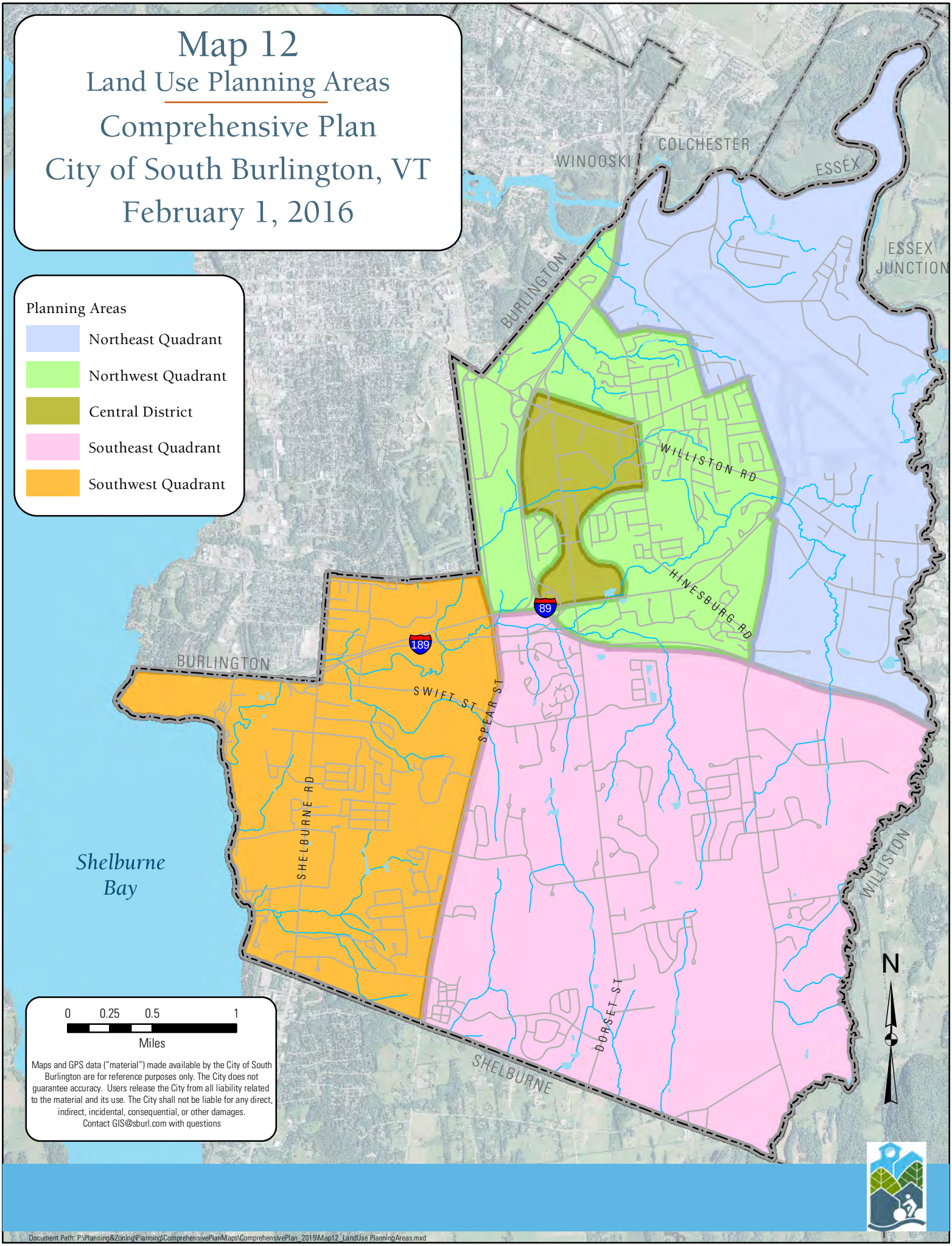
February 1, 2016



Map 11
Future Land Use
Comprehensive Plan
City of South Burlington, VT
February 1, 2016



Map 12
Land Use Planning Areas
Comprehensive Plan
City of South Burlington, VT
February 1, 2016



Maps and GPS data ("material") made available by the City of South Burlington are for reference purposes only. The City does not guarantee accuracy. Users release the City from all liability related to the material and its use. The City shall not be liable for any direct, indirect, incidental, consequential, or other damages. Contact GIS@sburl.com with questions

Document Path: P:\Planning&Zoning\Planning\ComprehensivePlanMaps\ComprehensivePlan_2015\Map12_LandUsePlanningAreas.mxd